A.C.L.R.R.

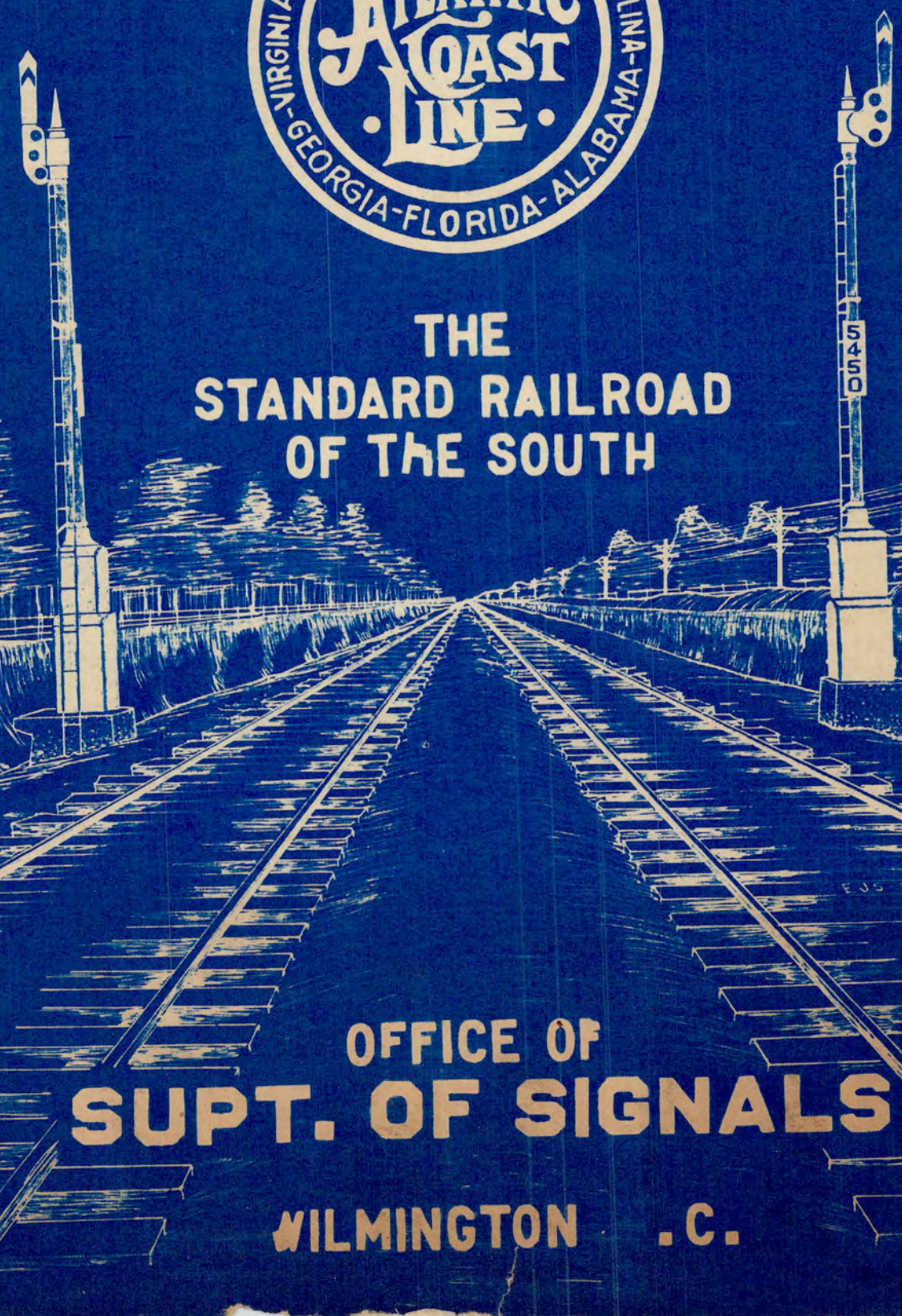
~STANDARDS~

SIGNAL STANDARDS

VIRGINIA-NORTH CAROLINA-SOUTH CAROLINA-GEORGIA-FLORIDA-ALABAMA-

ATLANTIC COAST LINE

THE
STANDARD RAILROAD
OF THE SOUTH



OFFICE OF
SUPT. OF SIGNALS

WILMINGTON .C.

SIGNAL STANDARDS

VIRGINIA-NORTH CAROLINA-SOUTH CAROLINA-GEORGIA-FLORIDA-ALABAMA

ATLANTIC COAST LINE

THE
STANDARD RAILROAD
OF THE SOUTH

SUPERINTENDENT OF SIGNALS
WILMINGTON, N.C.

Qua.	Name	No.	Qua.	Name
2	Tie Plate	#80	12	Rail Clips
"	Special "L" washers	#83	"	Spec. Tie Lock Washers
"	" "	#81	2	5/8"x10"x9'-0" Sawed Creo. Timbers
8	Std. Tie Bolts & nuts. X 11" long.	#82	1	Bootleg & Cap
"	" " " X 12½" "	#86		

5"X10"X9'-0" Sawed Creosoted Tie.

7"X9"X8'-6" Std. Tie.

5"X10"X9'-0" Sawed Creosoted Tie.

3/4" Flex. Steel Conduit 18" X 1 1/16" O.D. One end fitted with metal sleeve with groove for fastening with set screw. Other end plain.

3'-4"

20"

19½"

Note: 2½"

#80 #81 #82 #83 #84 #86

5"X10"X9'-0" Sawed Creosoted Switch Timber. Rod for each inductor.

These washers fitted to clear rail 2" to allow for movement of rail.

Note: No inductor must be shimmed with washers to give this distance.

3/4"X 2½" Strap.

Ideal Term. Box Plan C-65

Top of foundation. Level with top of tie

Concrete Foundation Plan A-218

Revised 2-1-29. " 9-5-33.

A.C.L.R.R.

Std. Location of Inductors, Bootlegs & Plating of ties for Train Control.

Supt. of Signals Office. Wilmington, N.C.

Approved Correct.

Chief Engr. Supt. Signals.

Pothead raised. Was 4" below tie. A-16-29.

Revised 8-1-25.

Drawn C.A.W. May 1st 1925

A-8

Sheet 1 of 2 Sheets.

℄ Gauge of Rail

19½"

℄ Inductor.

Std. 100# R.E. Rail

℄

Assemble with lock Washer.

2'-10"

3 15/16" — 6 5/16" — 10¼" — 4¾" — 4¾" — 4"

15/16" dia.

15/16" dia.

15/16" dia.

15/16" dia.

3"

15/16" dia.

℄

¼R.

1½" — 1½"

¼"R

1 5/32

1/32 — 15/16" — 1/32

1 31/32

½ SIZE.

WROUGHT IRON TIE PLATE #80

RAIL CLIP #83

1¼" — 9½" — 1¼" — 2"

1" dia.

½"

12"

SPECIAL "L" WASHER #81

STD ⅞" BOLT AND NUT #84 & 86.

⅞" dia.

2½"

#84 - 11½"

#86 - 12½"

Plate #84 added. Apr. 21, 1925.

1¼" — 7½" — 1¼" — 2"

1" dia.

1½"

10"

Scale 3" = 1'-0" SPECIAL "L" WASHER #82

14 3/16"

¾"

15/16" Hole

3 15/16" — 6 5/16" — 3 15/16"

15/16" Hole

2" — 4" — 2" — 8"

TIE PLATE #85

½" = 12"

A.C.L.R.R.

SPECIAL TIE PLATE AND FITTINGS FOR G.R.S. AUT. TRAIN CONTROL

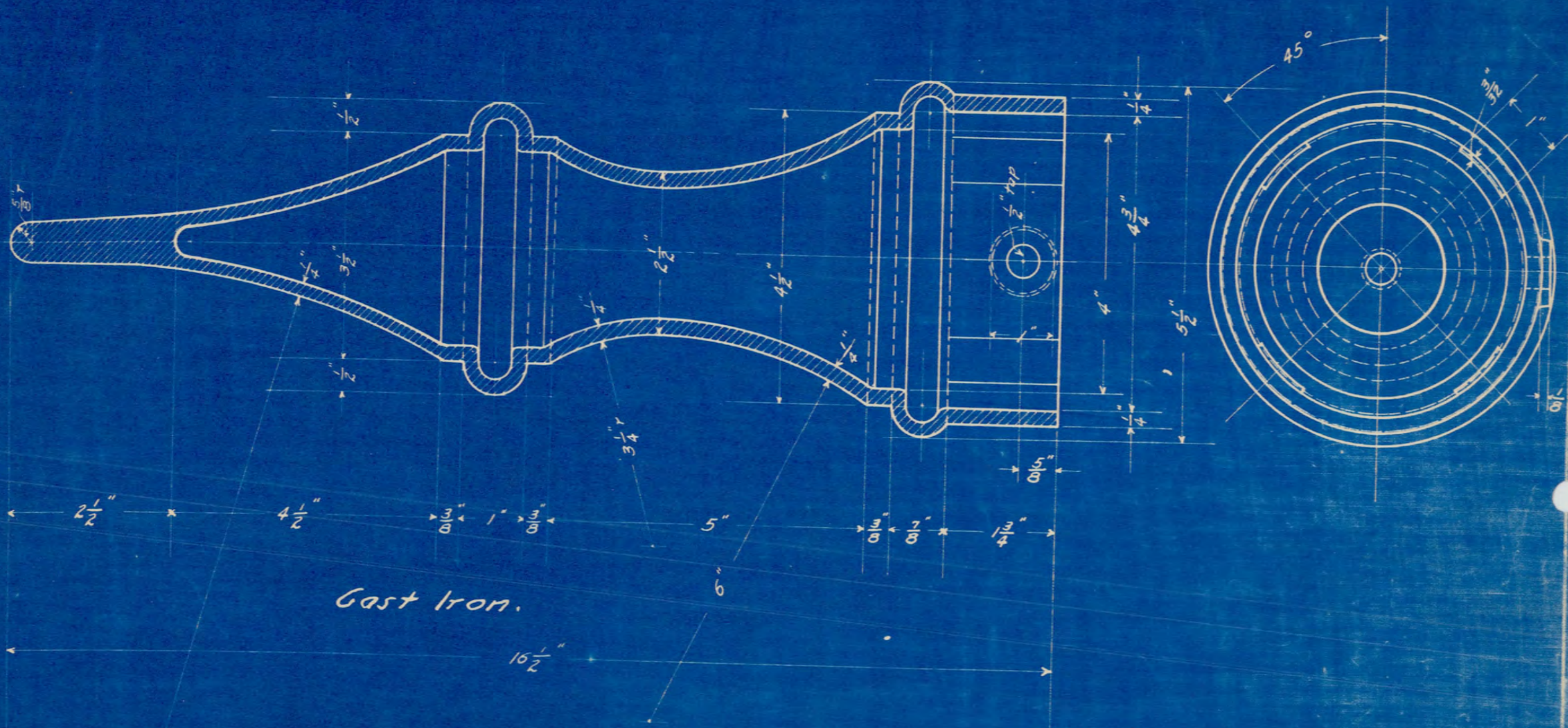
Signal Engrs. Office, Wilmington, N.C.

Approved: Courtenay A. Wellons, Supt. Signals

Drawn: July 2nd 1924

A-8

Sheet 2 of 2 Sheets.



Cast Iron.

A.C.L.R.R.

Std. pinnacle
for high signal poles.

Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr. Signal Engr

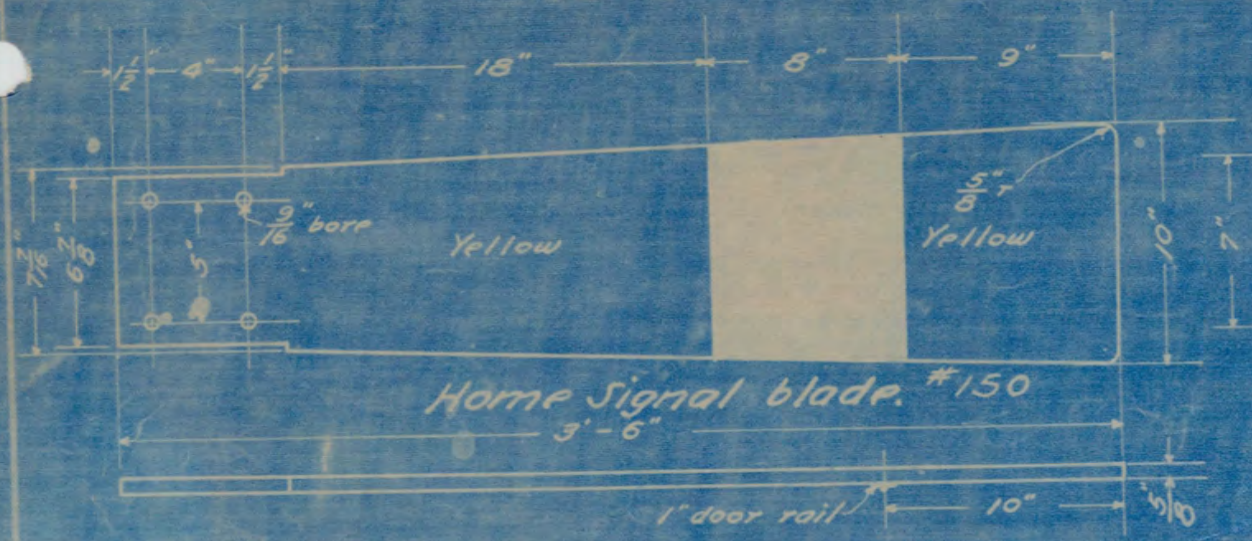
Revisions.

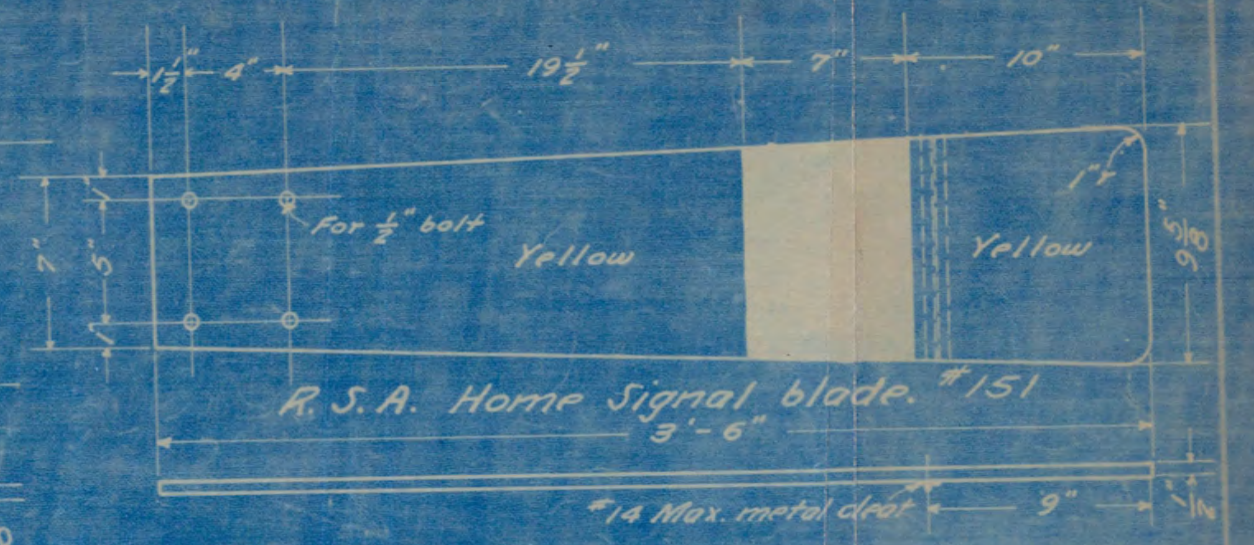
Scale .. 1/2 size

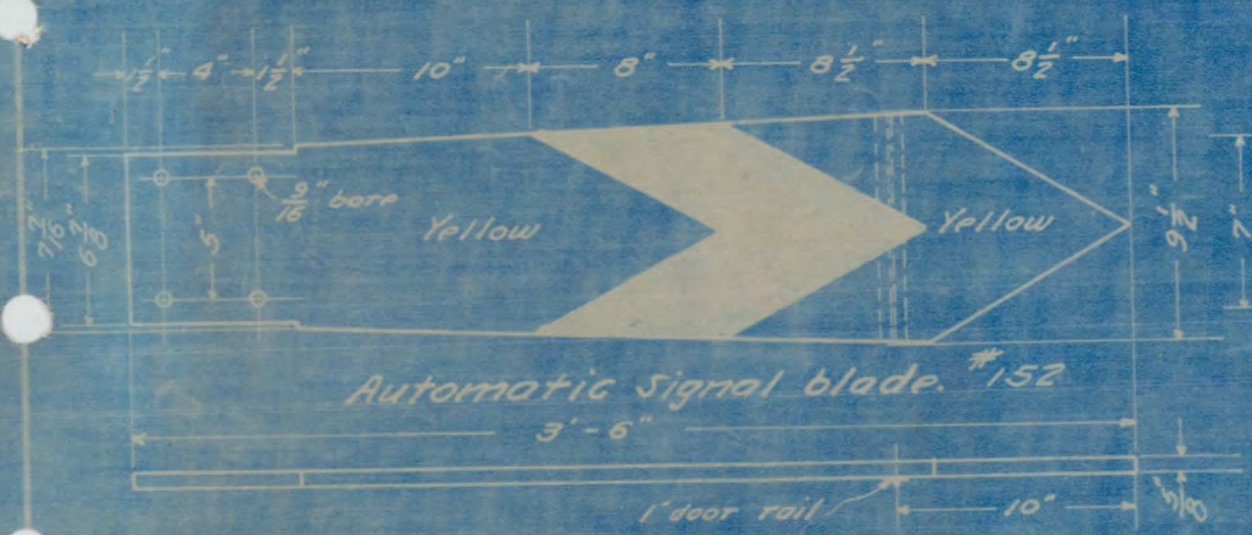
Supersedes A-9 of Apr. 14, 1910.

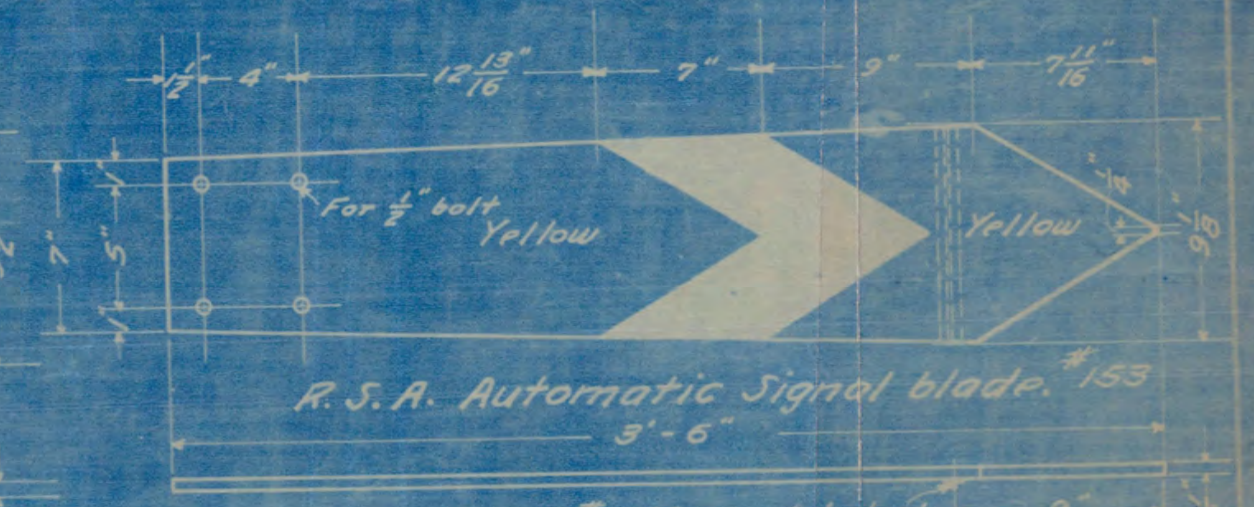
Drawn G.A.W. Nov. 16, 1910.

A — 9









Dwarf Signal blade.
#154

Note:
All blades shall be made of first quality white pine, poplar or bass.
Back of blades shall be the side with metal cleats.
All blades shall be painted as follows.
Paint fronts yellow with black stripe.
" backs black.
All blades shall be painted:-
2 Coats of white lead and oil.
2 " " German Ripolin Enamel.

A.C.L.R.R.

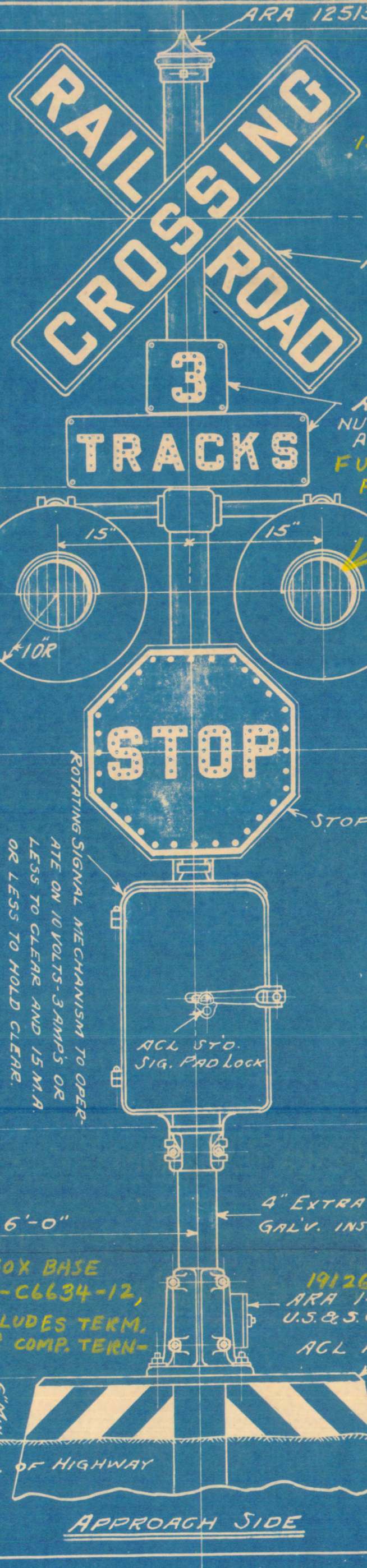
Std. wooden home, automatic and dwarf sig. blades.

Signal Engrs Office Wilmington N.C.

Approved _____ Correct _____

Chief Engr _____ Signal Engr.

Scale 1½" = 12"				Back of all blades to be Black. 10-28-22.	Supersedes A-15 of Feb. 4, 1911.	Drawn June 5, 1914.		A — 15


ARA 12513
RAIL ROAD CROSSING
FOR ESTIMATING WIRE:
90' for 2-UNIT SIGNAL
150' " 4-UNIT SIGNAL
ARA 16425
3
TRACKS
ARA 16455
NUMBER OF TRACKS AS SPECIFIED
FURNISH WIRE GUARDS FOR SIGNAL UNITS
21"
12"
18"
15"
15"
10" R
STOP
STOP SIGN
ROTATING SIGNAL MECHANISM TO OPERATE ON 10 VOLTS-3 AMPS OR LESS TO CLEAR AND 15 M.A. OR LESS TO HOLD CLEAR.
ACL STD. SIG. PAD LOCK
3'-6"
MIN. 7'-10"
MAX. 10'-0"
EDGE OF PAVEMENT
CURB
6'-0"
4" EXTRA HEAVY PIPE GAL'V. INSIDE & OUTSIDE.
TERM. BOX BASE 194348-C6634-12, WHICH INCLUDES TERM. BD. AND 8 COMP. TERMINALS.
191266-C6634-11
ARA 14492 OR
U.S.&S. CO. TERMINAL BASE.
ACL PLAN A-88 SH. 28 OR 29
AAR #11079
To BE FURNISHED WITH SIGNAL
6" MIN.
12" MAX.
LEVEL OF HIGHWAY
APPROACH SIDE
FIELD SIDE
NOTE:- WHEN LAMPS ARE MOUNTED BACK TO BACK, FRONT LAMPS EQUIPPED WITH 10V-10 WATT LAMPS; U.S.&S. CO. PLATE K-158 REF. 35 C. - BACK LAMPS EQUIPPED WITH 10 V-5 WATT LAMPS, U.S.&S. CO. PLATE K-158, REF. 35 E.
WIRE OUTLET HOLES TO BE DRILLED AND TAPPED FOR FIBER CHASE NIPPLES, SIZE 1/4" ONE AT LAMP BRACKET AND TWO AT MECHANISM CASE BRACKET
WHEN SPECIFIED FURNISH 2 U.S.&S. CO-HC 81 LAMP UNITS OR EQUAL, MOUNTED ED BACK TO BACK.
12'-3"

NOTE: ALL DIMENSIONS GIVEN, ARE FOR A FOUNDATION HEIGHT OF 6" AND CENTER OF LAMPS 7'-10" ABOVE LEVEL OF HIGHWAY.

REVISED NOTES.	ADDED REFERENCE FOR ALL BOLTS, NUTS AND WASHERS	ADDED REF. TO EXTRA ARM, SOCKET WRENCH AND BOLTS	REVISED
9-8-36.	J-13-39.	5-4-38.	

NOTE FOR HC 81 LAMPS ADDED. JUNE 22, 1936.	PAINTING WAS SHOWN ON A-193 SH. 8, JUNE 4, 35.	EXCEPTION ON FOUND. BOLTS ADDED. 3-12-35.

NOTES

FOR REQUISITES AND SPECIFICATIONS SEE B-17 SH. 2.

LAMP UNITS: U.S.&S CO. HC8, WRRS COMPANY OR GRS EQUAL; EQUIPPED WITH 11 VOLT 11 W. LAMPS, U.S.&S. PLATE K-158 REF. 35.

REFLECTOR UNITS: SINGLE REFRACTION TYPE, ARA SIGNAL SECTION SPECIFICATION 15633.

ROTATING SIGNAL: WRRS CO. MODEL 6, SIG. MECH. OR EQUAL WITH BRACKETS AND FASTENINGS FOR 4" EXTRA HEAVY PIPE.

STOP SIGN: 24" X 24", TO CONFORM TO SECTION 140, (FIG. 140) NATIONAL CONFERENCE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS" SIGN TO HAVE BLACK LETTERS AND BORDER. REFLECTING BUTTONS - RED FOR WORD STOP, WHITE FOR BORDER.

PAINTING

PAINT AND PAINTING SHALL BE IN ACCORDANCE WITH A.R.A. SIG. SECTION SPECIFICATION #12022.

FINISHING COAT

POLE, BASE AND FITTINGS AROUND POLE SHALL BE PAINTED ALUMINUM. PINNACLE, SHIELDS (BACK GROUNDS), LAMPS AND CROSS-BAR SUPPORTING LAMPS SHALL BE PAINTED BLACK, EGG SHELL FINISH, HIGH GRADE ENAMEL.

ALL BOLTS, NUTS AND WASHERS SHALL BE CADMIUM PLATED, OR GALVANIZED

SOCKET WRENCH, FOR LAMP UNITS, ONE PER INSTALLATION.

A. C. L. R. R.

HIGHWAY CROSSING SIGNAL FLASHING LIGHT TYPE WITH ROTATING DISC STOP SIGN.

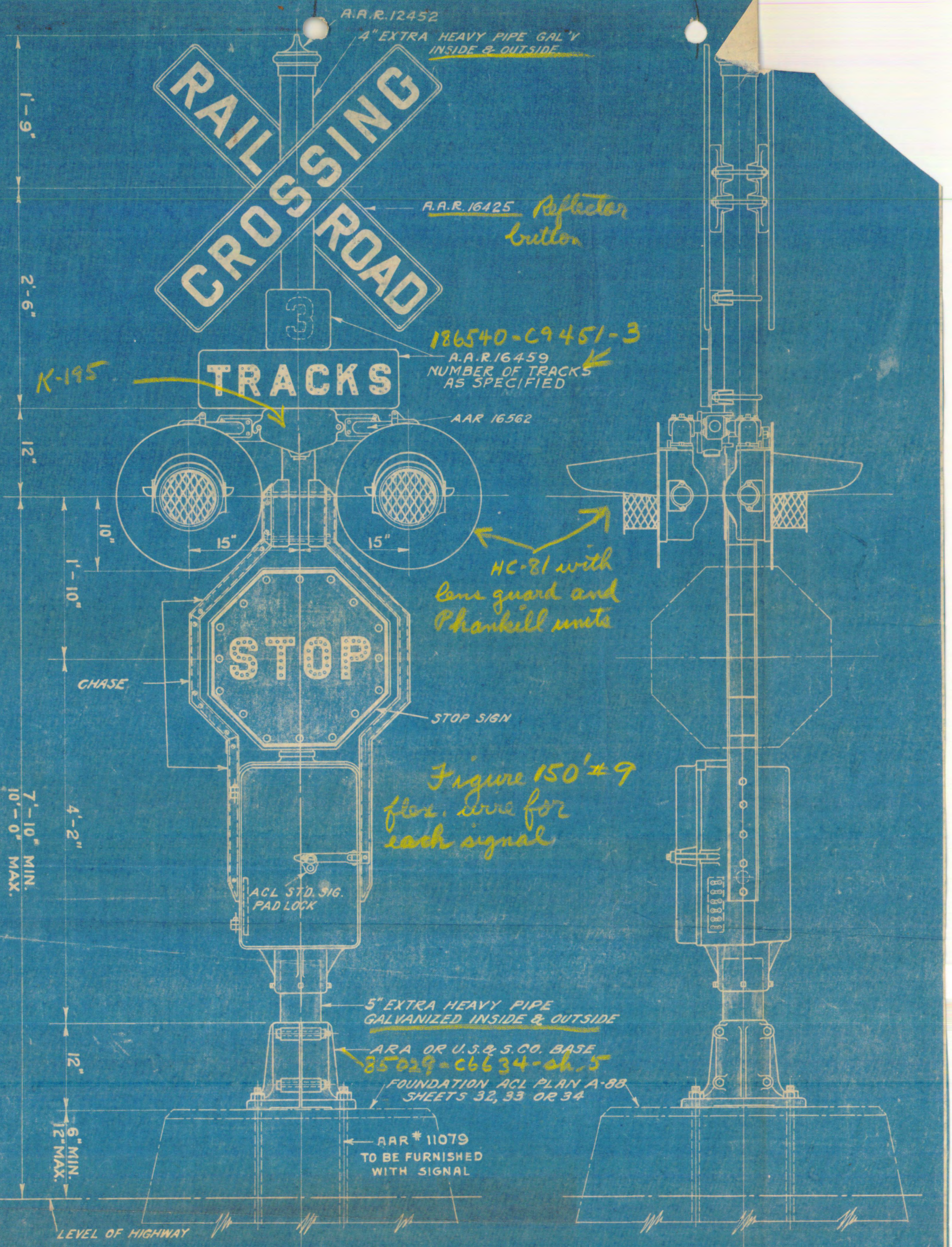
Supt. of Signals Office: Wilmington, N. C.

Drawn C.A.W.S. Oct. 27, 1934.	Scale	B- 17

Approved

Supt. of Signals.

Sheet 3 of ____ Sheets



NOTES

FOR REQUISITES AND SPECIFICATIONS SEE B-17 SHEET 2.

LAMP UNITS: U.S.& S. CO. HC 81 OR APPROVED EQUAL. FRONT LAMPS EQUIPPED WITH 10V.-10WATT LAMPS, U.S.& S.CO. PLATE K-158, REF. 35C.- BACK LAMPS EQUIPPED WITH 10V.-5 WATT LAMPS, U.S.& S. CO. PLATE K-156, REF. 35E, OR APPROVED EQUAL.

REFLECTOR UNITS: A.A.R. SIGNAL SECTION SPECIFICATIONS 156

ROTATING DISC SIGNAL: SHALL BE W.R.R.S.Co. MOD. 6 TYPE 0800-463, OR APP. EQUAL. MECHANISM TO OPERATE ON 10 VOLTS - 3 AMP. OR LESS TO CLEAR AND 15 M.A. OR LESS TO HOLD CLEAR.

STOP SIGN: SHALL CONFORM TO SECTION 140, (FIG. 140) NATIONAL CONFERENCE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND TO BE FINISHED WITH VITREOUS PORCELAIN ENAMEL.

PAINTING: PAINT AND PAINTING SHALL BE IN ACCORDANCE WITH A.R.A. SIGNAL SECTION SPECIFICATION #120

FINISHING COAT: POLE, BASE, MECHANISM CASE AND FITTINGS AROUND POLE SHALL BE PAINTED ALUMINUM. PINNACLE, BACKGROUNDS, LAMPS AND CROSS-ARM SUPPORTING LAMPS SHALL BE PAINTED BLACK, EGG SHELL FINISH, HIGH GRADE ENAMEL.

PHANTOM LIGHT ELIMINATOR: EACH LAMP TO BE EQUIPPED WITH PHANKILL UNIT, U.S.& S.CO. PG. #20705, DWG. C-3482 SHT. 7, OR APPROVED EQUAL.

STONE GUARDS: U.S.& S. Co. DWG S-4438, SH. 3, OR APPROVED EQUAL.

ALL BOLTS, NUTS AND WASHERS SHALL BE CADMIUM PLATED, OR GALVANIZED.

SOCKET WRENCH, FOR LAMP UNITS, ONE PER INSTALLATION.

Figure 150'#9 flex. wire for each signal

UNLESS OTHERWISE SPECIFIED

ADDED "TYPE 0800-463" TO MOD. 6 REFERENCE. 6-13-39.	CROSS BUCK REFERENCE CHANGED TO REFLEX TYPE- 8-8-38
ADDED REFERENCE FOR ALL BOLTS, NUTS AND WASHERS. 1-13-39	ADDED REF. TO LAMP UNITS, EXTRA ARM, SOCKET WRENCH AND FOUND. BOLTS 5-4-38
REVISED A.A.R. REFERENCES AND ADDED STONE GUARD. 1-5-38.	PHANKILL UNIT NOTE ADDED. 6-19-37.

Rec'd from Insp. Dept. about 8-1-39

A. C. L. R. R.

HIGHWAY CROSSING SIGNAL
FLASHING LIGHT TYPE
WITH ROTATING DISC
STOP SIGN

DRAWN WEH. OCT. 27, 1936.

SHEET 4

B-17

CORRECTED REF. FOR TRACK SIGN 9-5-41.

DIMENSIONS CHECKED 3-13-41.

COUNTERWEIGHT ADDED JULY 29, 1940.

NOTES

SIGNAL LAMP UNITS: US&S STYLE "HG 81" OR APPROVED EQUAL; EQUIPPED WITH PHANTOM ELIMINATING DEVICE WHERE SPECIFIED.

BELL: 10 VOLTS D-C. CROSSING BELL.

GATE: MECHANISM AND ASSEMBLY SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION TO GROUP 1.

GATE LAMP UNITS: WRS CO. 1575, WITH FRESNEL LENS, OR APPROVED EQUAL.

REFLECTOR UNITS: DOUBLE REFRACTION TYPE AAR SIGNAL SECTION SPEC. 156.

FIELD PAINTING - FINISHING COAT SHALL BE:
"A" BASE, MAST, FITTINGS AROUND MAST, GATE MECHANISM CASE AND GATE ARM CASTINGS - ALUMINUM.
"B" PINNACLE (OR BELL), LAMP UNITS, BACKGROUNDS AND SUPPORTING ARMS - BLACK, ENAMEL EGGSHELL FINISH.

SOCKET WRENCH: FOR LAMP UNITS, ONE PER INSTALLATION.

A. C. L. R. R.

HIGHWAY CROSSING SIGNAL
FLASHING LIGHT TYPE - WITH
SHORT GATE ARM

Supt. of Signals Office: Wilmington, N. C.

Approved

Supt. of Signals.

Drawn E 223-40.

B-17

Sheet 9 of 5

4-25-56	TERMINAL BOX BASE CORRECTED.
REV. 1-22-51	PAINTING CHANGED
LAMP HEIGHT CHANGED FROM 8'-0" TO 8'-10"	12-15-50
ADDED CROSS REFERENCE TO AAR SPECIFICATIONS	10-17-49
REFERENCES CHECKED.	8-30-49
ALL LAMP BULBS MADE 10V-10W	FEB. 1947
4-10-58 STANDARDIZED ON WRS CO. #222 BELL. CKD	
6'-24"-57 CROWN OF PAVEMENT ADDED. CKD	
DIMENSIONS CHECKED 3-13-41	

A.A.R. 12452 OR BELL WHERE SPECIFIED

W.R.S. #222 BELL (10V. D.C.) OR APPROVED EQUAL - FOR 4" PIPE POST MOUNTING.

A.A.R. 16429

RAIL ROAD CROSSING

NUMBER OF TRACKS AS SPECIFIED A.A.R. 164513

TRACKS

A.A.R. 16566

12"

15" 15"

20" DISC

LAMP UNIT AAR. SPEC. 190-42

STOP ON RED SIGNAL

A.A.R. 16468

SIMILAR TO U.S.&S. CO. PL. K-195, REF. 14

2'6" - MIN.

EXTRA HEAVY 4" PIPE POST GALV. INSIDE & OUTSIDE

FOR STANDARD SIGNAL, U.S.&S. CO. COMBINED BASE AND TERMINAL BOX, PLATE K-152, REF. Ca OR APPROVED EQUAL. WHERE AN EXTRA ARM IS REQUIRED USE REF. Cb.

EDGE OF PAVEMENT

FOUNDATION ACL. RR. STD.

9½"

4 ARR. #11079 TO BE FURNISHED WITH SIGNAL

9½"

APPROACH SIDE

FIELD SIDE

CROWN OF PAVEMENT

MANUFACTURERS REFERENCES IN ACCORDANCE WITH AAR SPECIFICATIONS

LAMP UNITS -
U.S.&S. Co. HC-81, OR APPROVED EQUAL;
LAMP UNITS SHALL BE EQUIPPED WITH 10V., 10W. BULBS, AND FRONT AND SIDE COVER GUARDS. PL. K-220, OR APPROVED EQUAL

SOCKET WRENCH, FOR LAMP UNITS, ONE PER INSTALLATION.

ALL FITTINGS WHICH TOUCH PIPE POST TO BE GALVANIZED, EXCEPT CASTINGS.

PAINTING

"A" BASE, PIPE POST, FITTINGS AROUND PIPE POST, AND PINNACLE TO BE PAINTED ALUMINUM.
"B" BELL, LAMP UNITS AND BACK-GROUNDS TO BE BLACK, FLAT.

REFLECTOR UNITS -
A.A.R. SIG. SECTION SPEC. #156-40 OR APPROVED EQUAL

ADDED REF. TO LAMP UNITS, TERRA HEM, SOCKET WRENCH AND FOUNDATION 5-4-38	I.S.S. 33. E SUP. SHT. 5 OF 5 2-24-34 REV. 10-1-45

A.C.L.R.R.

HIGHWAY CROSSING SIGNAL

FLASHING LIGHT TYPE

B-17

GENERAL

1. ADVANCE WARNING SIGN (W-1 OR W-2 STANDARD) TO BE PLACED AS REQUIRED BY LOCAL CONDITIONS, NOT LESS THAN 200 FEET (IN CITIES NOT LESS THAN 100 FEET), NOR MORE THAN 450 FEET FROM CROSSING.

2. AT CROSSINGS WHERE FLASHING LIGHT SIGNALS ARE USED ONE SHALL BE PLACED ON EACH SIDE OF THE TRACK.

3. BELL MAY BE USED ON CROSSING SIGNALS WHEN REQUIRED BY LOCAL CONDITIONS.

4. HEIGHT OF SIGNAL FOUNDATION; NOT LESS THAN SIX (6) INCHES AND NOT MORE THAN TWELVE (12) INCHES ABOVE LEVEL OF HIGHWAY.

5. LOCATION OF SIGNAL FIFTEEN (15) FEET FROM CENTER OF NEAREST RAILROAD TRACK AND SIX (6) FEET FROM EDGE OF PAVEMENT.

6. MOUNTING. THE RAILROAD STANDARD HIGHWAY CROSSING SIGN AND THE SIGNAL SHALL BE MOUNTED ON THE SAME POST.

7. OPERATING TIME. AUTOMATIC SIGNAL DEVICES SHALL INDICATE THE APPROACH OF TRAINS FOR NOT LESS THAN TWENTY (20) SECONDS BEFORE THE ARRIVAL OF THE FASTEST TRAIN OPERATING OVER THE CROSSING AND CONTINUE TO OPERATE UNTIL THE REAR OF THE TRAIN REACHES OR CLEARS THE CROSSING.

8. POSITION OF SIGNS AND SIGNALS ON SIGNAL STANDARD. RAILROAD CROSSING SIGN TO BE AT TOP OF POST. "STOP ON RED SIGNAL" REFLECTING SIGN (OR ROTATING DISC BEARING THE WORD "STOP" IN REFLECTOR LENSES, A.C.L. PLAN B-17, SHEET 4), TO BE PLACED BELOW THE LIGHTS. SIGN INDICATING NUMBER OF TRACKS MAY BE PLACED EITHER ABOVE OR BELOW LIGHTS.

SIGNAL

1. HEIGHT. THE CENTER OF LAMPS TO BE NOT LESS THAN SEVEN FEET TEN INCHES (7'-10") NOR MORE THAN TEN FEET (10'-0") ABOVE THE SURFACE OF THE HIGHWAY.

2. LAMPS. SIGNAL LIGHTS SHALL SHINE IN BOTH DIRECTIONS ALONG THE HIGHWAY AND SHALL BE MOUNTED HORIZONTALLY AT TWO FOOT SIX INCH (2'-6") CENTERS. LAMPS WHEN ARRANGED IN PAIRS BACK TO BACK SHALL OPEN AT THE FRONT AND BE DESIGNED SO THAT THE DOOR WILL OPEN TO THE SIDE OR DOWNWARD.

3. FLASHES. LIGHTS SHALL FLASH ALTERNATELY. THE NUMBER OF FLASHES OF EACH LIGHT PER MINUTE SHALL BE THIRTY (30) MINIMUM, FORTY-FIVE (45) MAXIMUM.

4. HOODS AND BACKGROUNDS. LAMP UNITS SHALL BE PROPERLY HOODED. BACK GROUNDS, TWENTY (20) INCHES IN DIAMETER, SHALL BE PAINTED BLACK ON BOTH SIDES.

5. RANGE. WHEN LAMPS ARE OPERATED AT NORMAL VOLTAGE, THE RANGE, ON TANGENT, SHALL BE AT LEAST THREE HUNDRED (300) FEET ON A CLEAR DAY, WITH A BRIGHT SUN AT OR NEAR THE ZENITH.

6. SPREAD. THE BEAM SPREAD SHALL BE NOT LESS THAN THREE (3) DEGREES EACH SIDE OF THE AXIAL BEAM UNDER NORMAL CONDITIONS. THIS BEAM SPREAD IS INTERPRETED TO REFER TO THE POINT AT THE ANGLE MENTIONED WHERE THE INTENSITY OF THE BEAM IS FIFTY (50) PER CENT OF THE AXIAL BEAM UNDER NORMAL CONDITIONS.

7. LENSES AND ROUNDELS SHALL BE FIVE AND THREE-EIGHTHS ($5\frac{3}{8}$) INCHES MINIMUM, EIGHT AND THREE EIGHTHS ($8\frac{3}{8}$) INCHES MAXIMUM.

8. TRANSMISSION VALUES. (FOR RED LENSES AND ROUNDELS) TRANSMISSION VALUES, BASED ON A.A.R. STANDARD SCALE, SHOULD BE 150 TO 220 WHERE PLAIN COVER GLASS WITH REFLECTOR IS USED; 220 TO 300 WHERE SIGNALS ARE USED WITHOUT REFLECTORS, OR WHERE A RIBBED SPREADLIGHT LENS IS USED IN FRONT OF THE REFLECTOR.

9. SHORT RANGE INDICATION. SIGNAL SHALL DISPLAY A SATISFACTORY SHORT RANGE INDICATION.

10. PEEP HOLES MAY BE USED.

NOTE - FOR SIGNAL DRAWINGS, SEE A.C.L.R.R. PLAN:-

B-17, SHEET 1, HIGHWAY CROSSING SIGNAL, FLASHING LIGHT TYPE, ONLY.
B-17, " 3, " " " " " " WITH ——
B-17, " 4, " " " " " " " ROTATING DISC STOP SIGN.
B-17, " 5, " " " " " " " AUTOMATIC GATE ARM.

SUPERSEDES B-17-2 OF 12-2-35 ACCOUNT SHEET REDRAWN.

GENERAL ENG. DEPT. PRINT RECORD
RECD 3-27-39 WITH LETTER FROM E. J. Kalbfleisch DATED 3-24-39
SENT OUT WITH LETTER OF ____ TO ____

A. C. L. R. R.

REQUISITES AND SPECIFICATIONS FOR HIGHWAY CROSSING SIGNALS

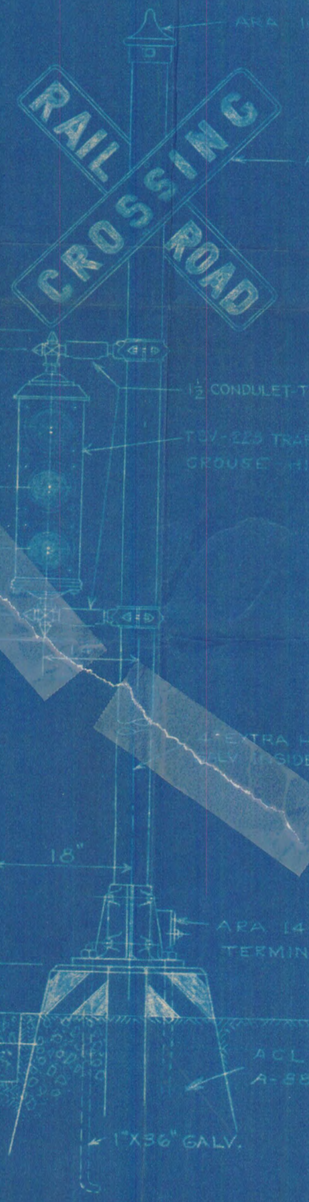
FLASHING LIGHT TYPE

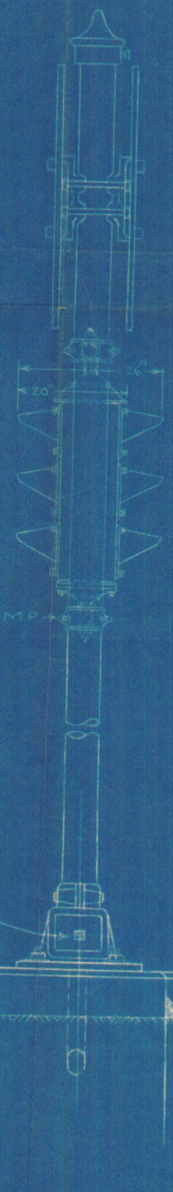
Supt. of Signals Office: Wilmington, N. C.

Approved _____ Supt. of Signals.

Drawn E.	Scale	B-17
5-4-38.		

Sheet 2 Prints





REQUISITES AND SPECIFICATIONS SHALL BE IN ACCORDANCE WITH PLAN B-17 SHEET 2 SO FAR AS THEY APPLY TO THIS SIGNAL.
PAINTING SHALL BE AS FOLLOWS:-
POLE, BASE AND FITTINGS AROUND POLE - ALUMINUM PAINT. PINNACLE, LAMPS AND SUPPORTING BRACKETS BLACK, BOX - SHELL FINISH, HIGH GRADE ENAMEL.

GENERAL ENG. DEPT.
PRINT RECORD
REC'D 7-16-35 WITH
LETTER FROM R.R.Co.
DATED 7-13-35
SENT OUT WITH LETTER
OF ..... TO .....

FIRST PROPOSED FOR U.S.P.W.
PROJECT NO: NRM 905-7 (1935)
AT RED SPRINGS, N. C.
LAYOUT PLAN XE-61

A.C.L.R.R.

HIGHWAY CROSSING SIGNAL

STOP AND GO TYPE.

SUPT OF SIGNALS OFFICE WILMINGTON N.C.

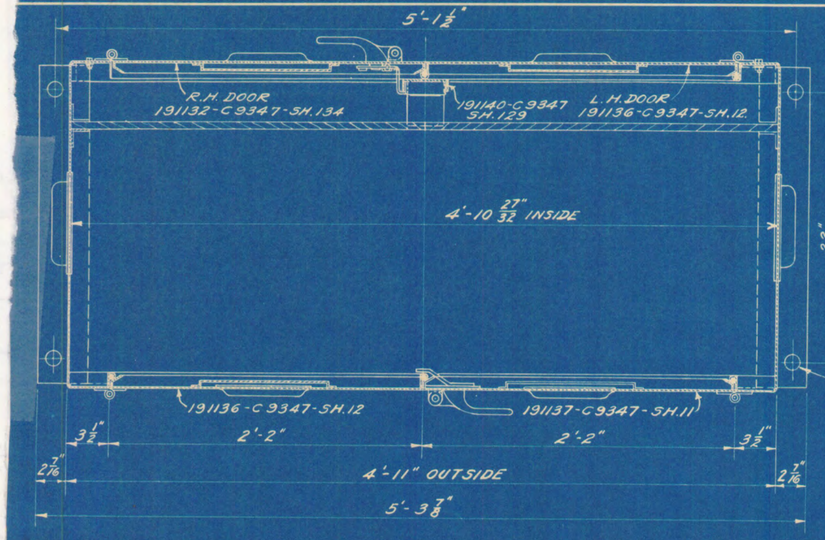
APPROVED

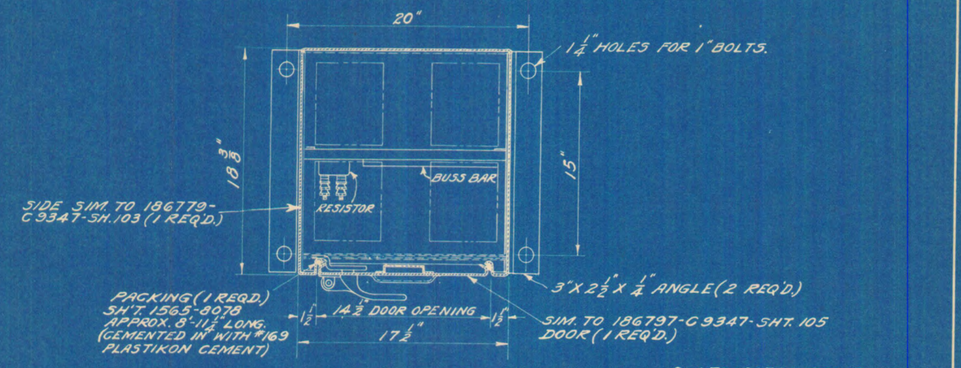
SUPT OF SIGNALS

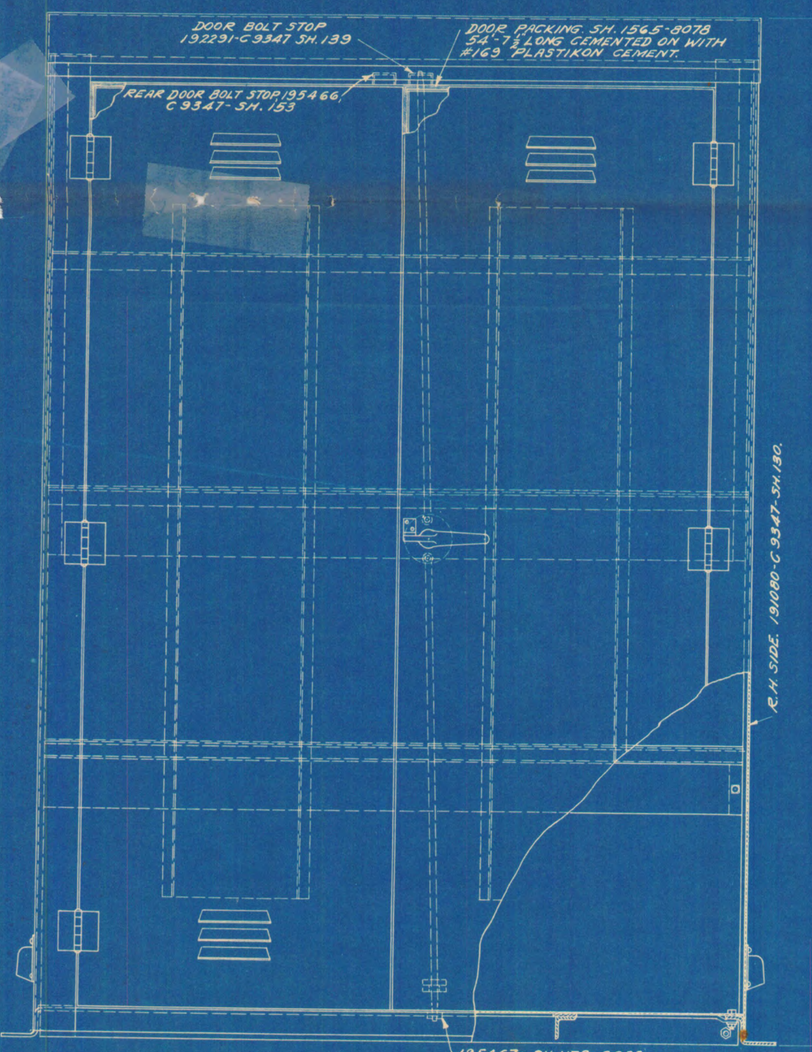
DRAWN
JUNE 10, 1935.

B-18

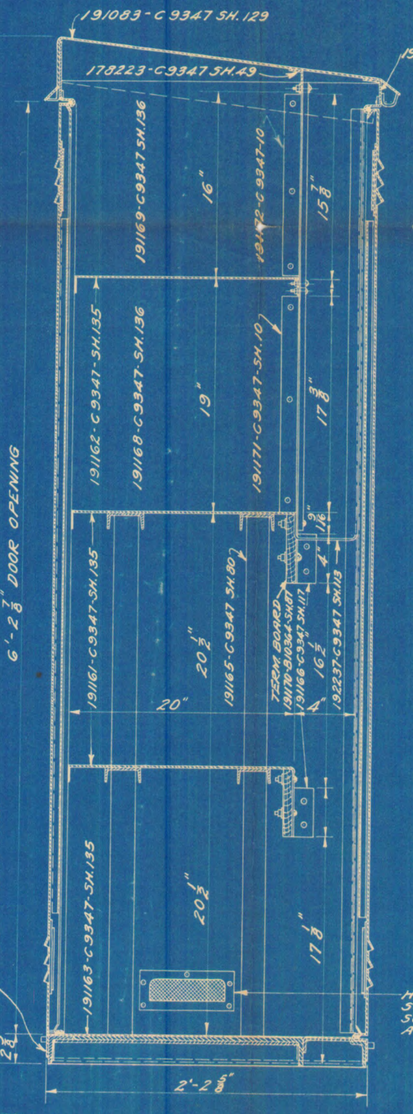
2



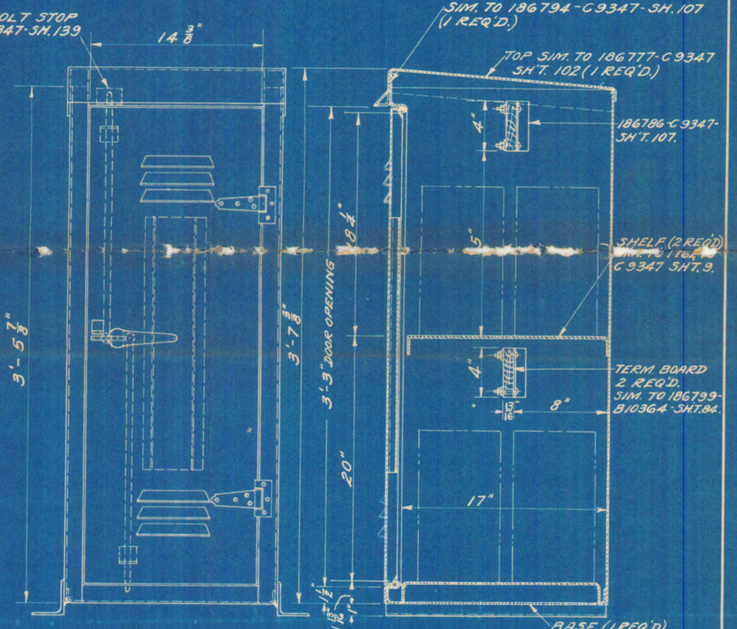



DOOR BOLT STOP 192291-C 9347 SH.139
DOOR PACKING. SH. 1565-8078 54'-7¼" LONG CEMENTED ON WITH #169 PLASTIKON CEMENT.
REAR DOOR BOLT STOP 195466 C 9347-SH. 153
R.H. SIDE: 191080-C 9347-SH.130.
6'-11"
6'-2 7/8" DOOR OPENING
170335-C 9347-SH.4.
2½"
195467-SH. 1173-9999

INSTRUMENT CASE
U. S. & S. CO. PLAN D2439 SH. 28. P.C. # 190991.
FOUND. PLAN A-88-20.



HOODS, 173845-B 7318 SH. 8.
SCREENS, 172488-SH 83-7318.
SCREEN HOLDERS, 172487-SH. 83-7318.
ASSEM. AS SHOWN ON SH. 83-7318.

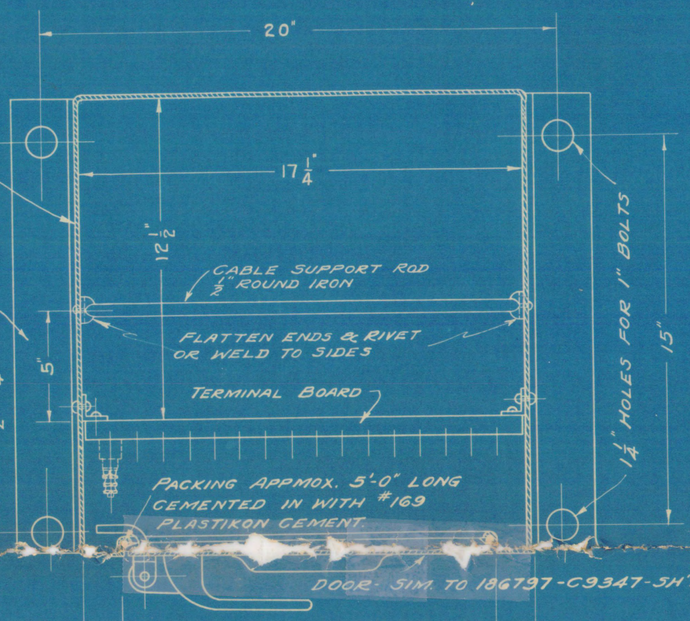


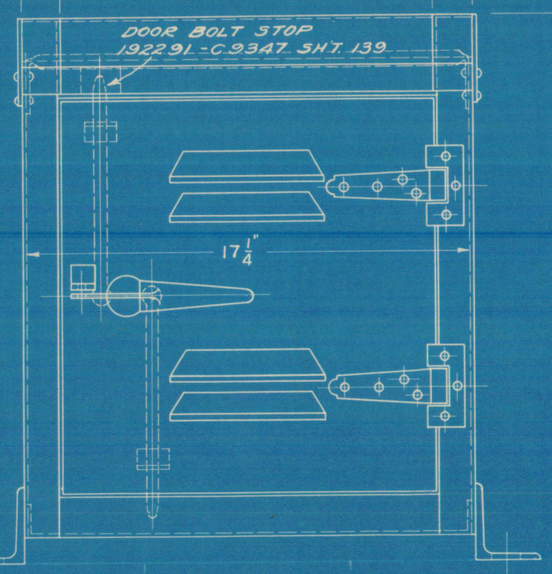
BATTERY OR INSTRUMENT CASE
U. S. & S. CO. P.C. # 194279-D2439-34.
WITH KEY OPER. C.K.T. CONTRL - P.C. # 194320-D2439-34.
TO BE FURNISHED WITH BATTERY TRAYS, PLAN A-251, SHEET 2, AS REQUIRED.
FOUND. PLAN A-88, SH'T. 26.

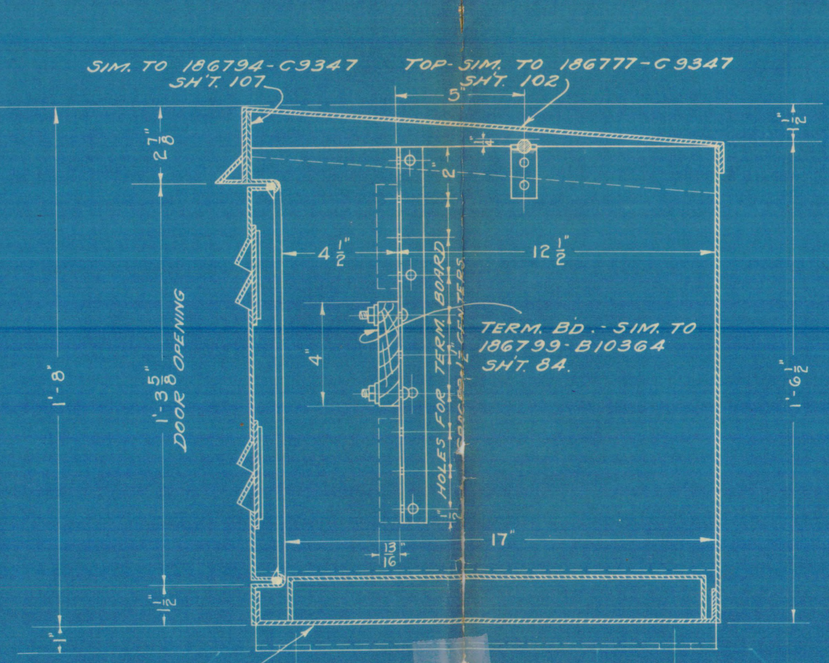
ACLRR
GENERAL DRAWING
SHEET STEEL
INSTRUMENT & BATTERY CASES

SIGNAL DEPT. APPROVED
WILMINGTON, N.C. CORRECT

		NOTE RE. BATT. TRAY ADDED. P.C. NO'S. ADDED. 2-11-37.	DRAWN WEH JULY 24, 1936	SCALE 1½" = 12"	C-20







NOTES:- SEE PLAN C-22 FOR TERMINATING CABLE IN THIS CASE.

GENERAL ENG. DEPT.
PRINT RECORD
REC'D 10-9-36 WITH
LETTER FROM
DATED
SENT OUT WITH LETTER
OF TO

A.C.L.RR.

TERMINAL CASE OR JUNCTION BOX FOR PARKWAY CABLE.

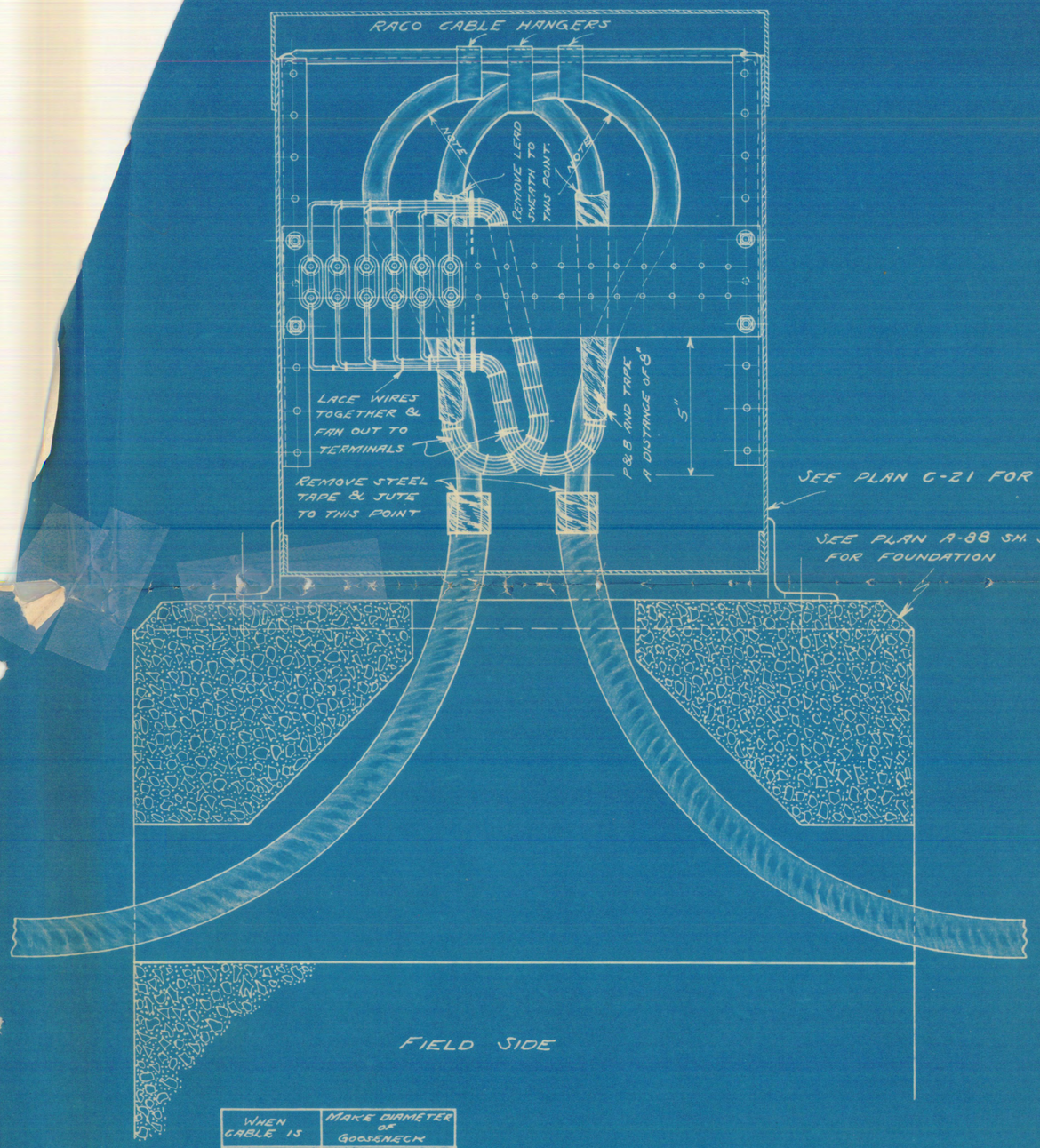
SIGNAL DEPT.

WILMINGTON, N.C.

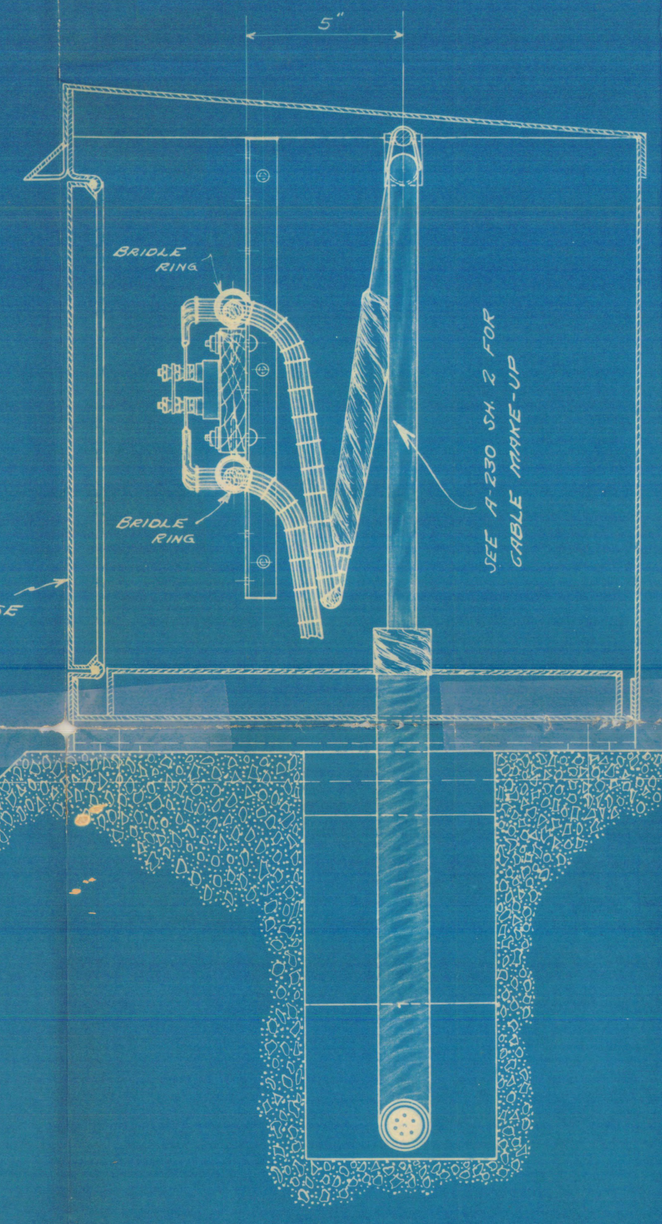
SCALE: 3" = 1'-0"

DRAWN: C.A.W.
SEPT. 24, 1936.

C-21


RACO CABLE HANGERS
REMOVE LEAD SHEATH TO THIS POINT.
NOTE
NOTE
LACE WIRES TOGETHER & FAN OUT TO TERMINALS
REMOVE STEEL TAPE & JUTE TO THIS POINT
P & B AND TAPE A DISTANCE OF 5"
5"
SEE PLAN C-21 FOR CASE
SEE PLAN A-88 SH. 31 FOR FOUNDATION
FIELD SIDE

WHEN CABLE IS	MAKE DIAMETER OF GOOSENECK
3 COND'R.	6½ INCHES
5 "	7 "
7 "	7½ "
9 "	8 "
11 "	9 "
13 "	10 "
15 "	12 "



GENERAL ENG. DEPT.
PRINT RECORD
REC'D 10-9-36 WITH
LETTER FROM
DATED
SENT OUT WITH LETTER
OF TO

A.C.L. RR.

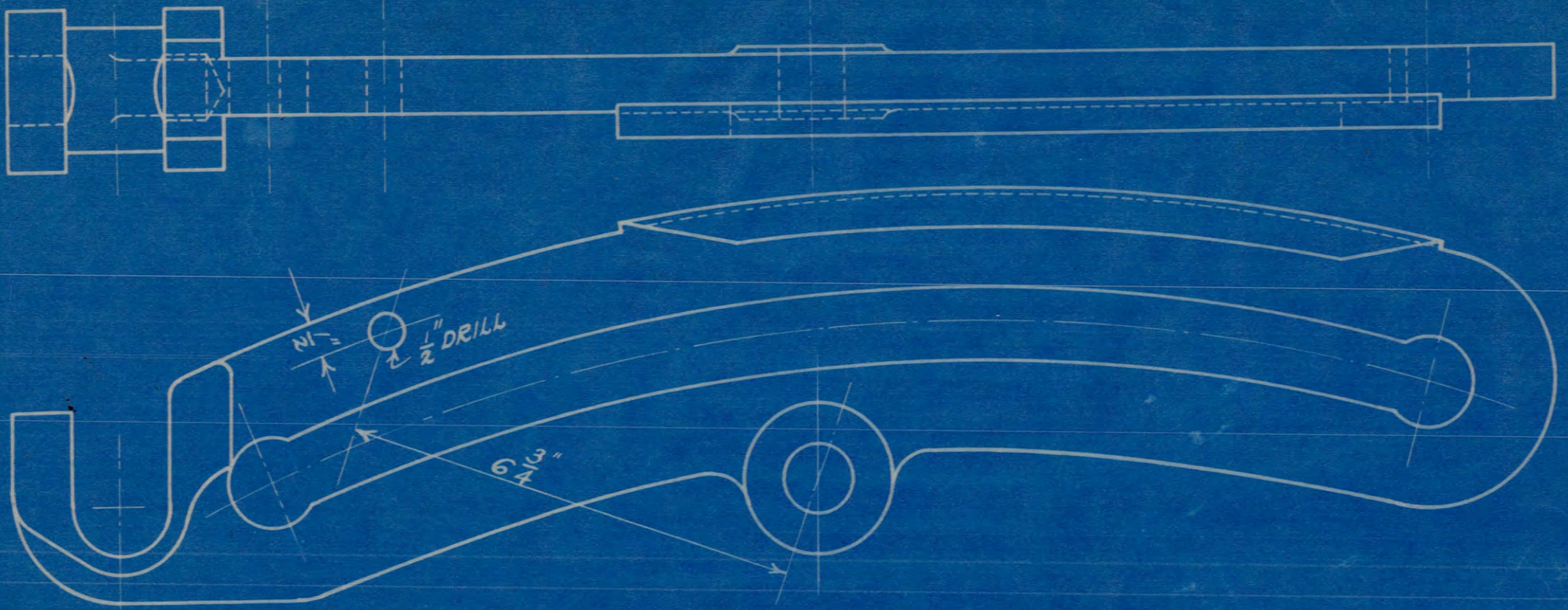
METHOD OF TERMINATING PARKWAY CABLE IN TERMINAL CASE OR JUNCTION BOX.

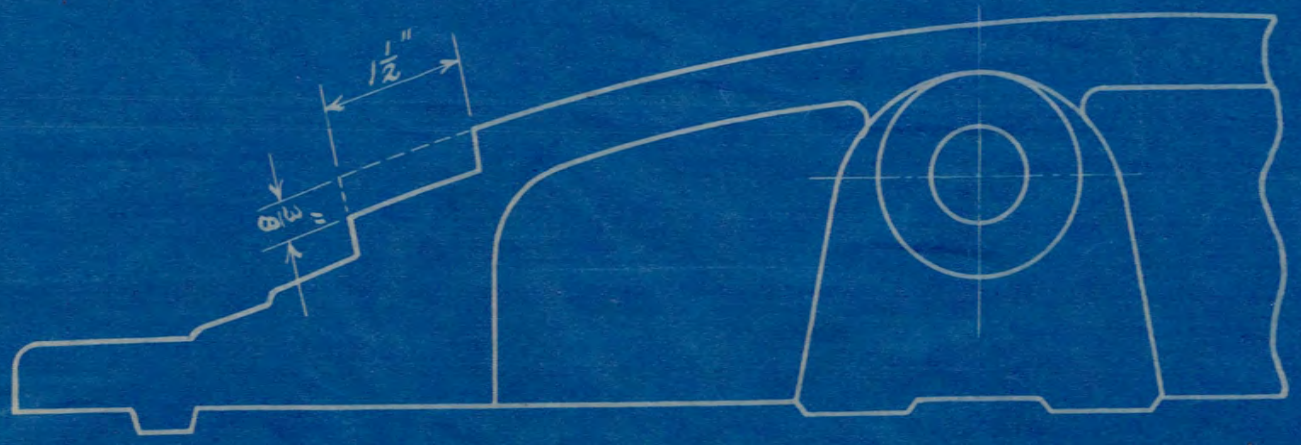
SIGNAL DEPT. WILMINGTON, N.C.

SCALE: 4" = 1'-0"

DRAWN
SEPT. 30, 1936.

C-22





A. C. L. R. R.

ADAPTATION OF
S.&F. ROCKER & QUADRANT
TO U.S.&S. CO. FORCED DROP LOCK

Supt. of Signals Office: Wilmington, N. C.

Approved | Correct

Chief Eng'r. | Supt. of Signals.

Revisions,

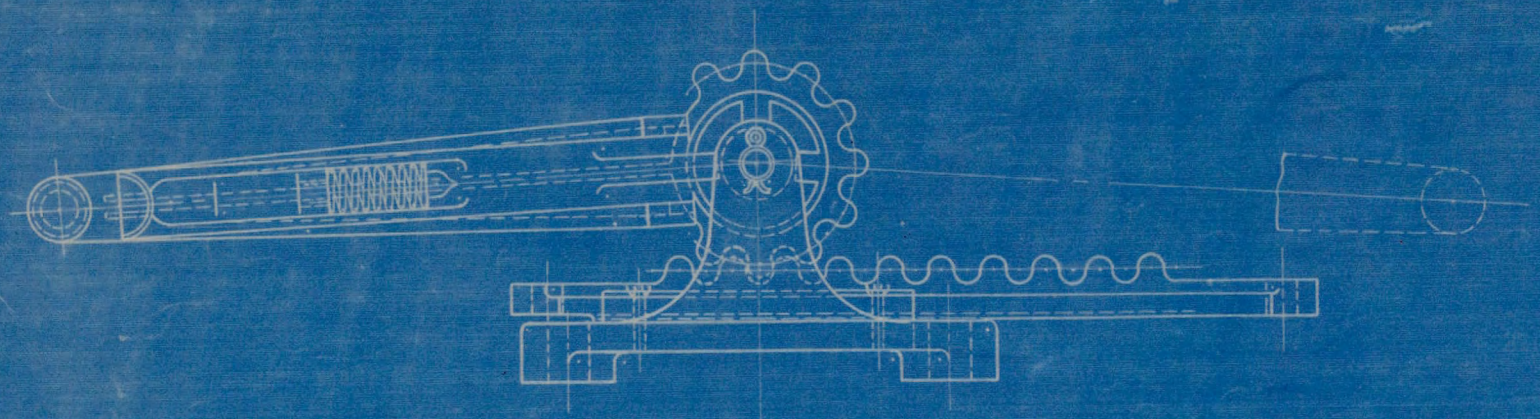
	DRILLING WAS 6 3/4". CHANGED ACCOUNT U.S.& S. CO. LETTER OF 7-30-30.	SUPERSEDES A-23, SHEET 4, OF 1-27-10 ACCT. REDRAWN.

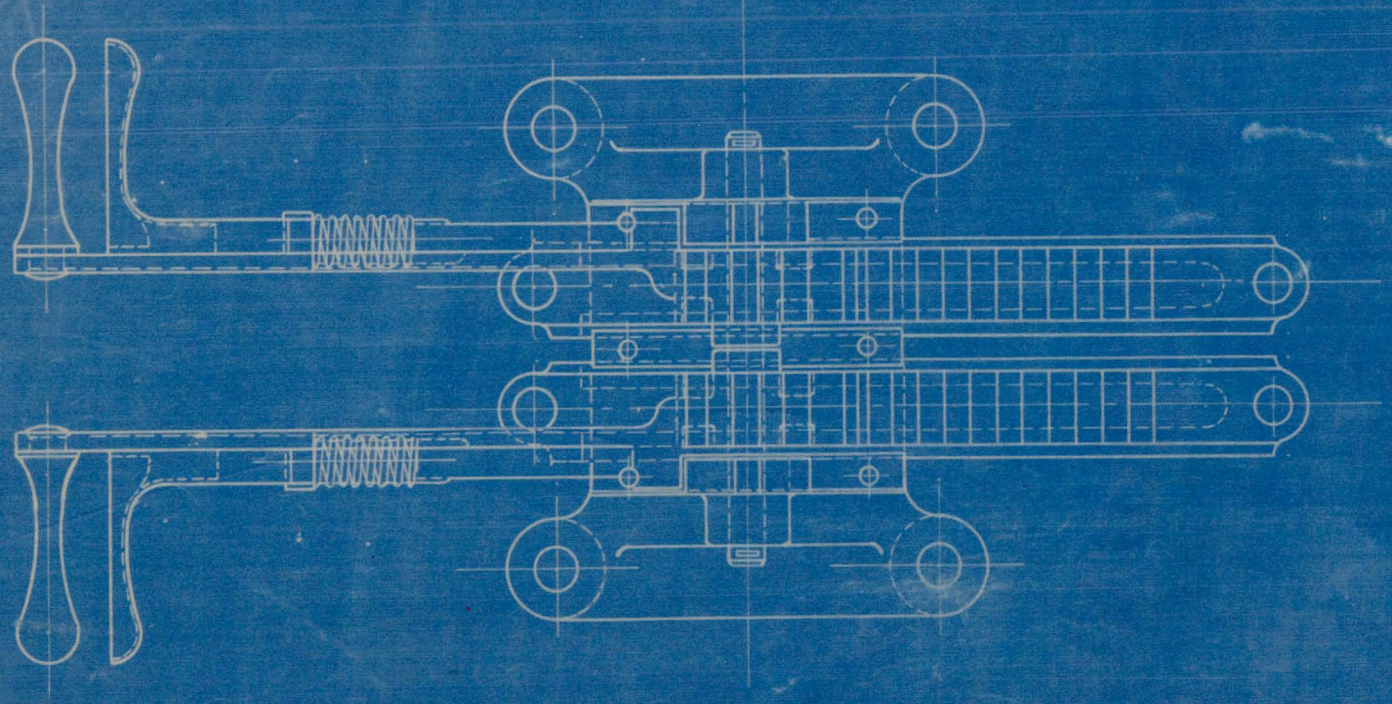
Drawn E. J. S. MAY 22, 1930

A-23

Scale: HALF SIZE

Sheet 4 of 6 Sheets





A.C.L.R.R.

TWO LEVER WALL TYPE TRAIN ORDER SIGNAL MACHINE

Signal Engrs. Office, Wilmington, N.C.

Approved — Chief Engr.

Correct — Supt. Signals

	Wos A-191 Feb. 9, 1929.	Brown W.E.H. July 23, 1923		A- 23

Scale: 1/2" = 1"

Sheet 5 of 6

A.C.L.R.

Method of attaching Equalizing Springs to mechanical levers equipped with Circuit Controllers.

Signal Engrs. Office Wilmington N.C.

Approved _____ Chief Engr

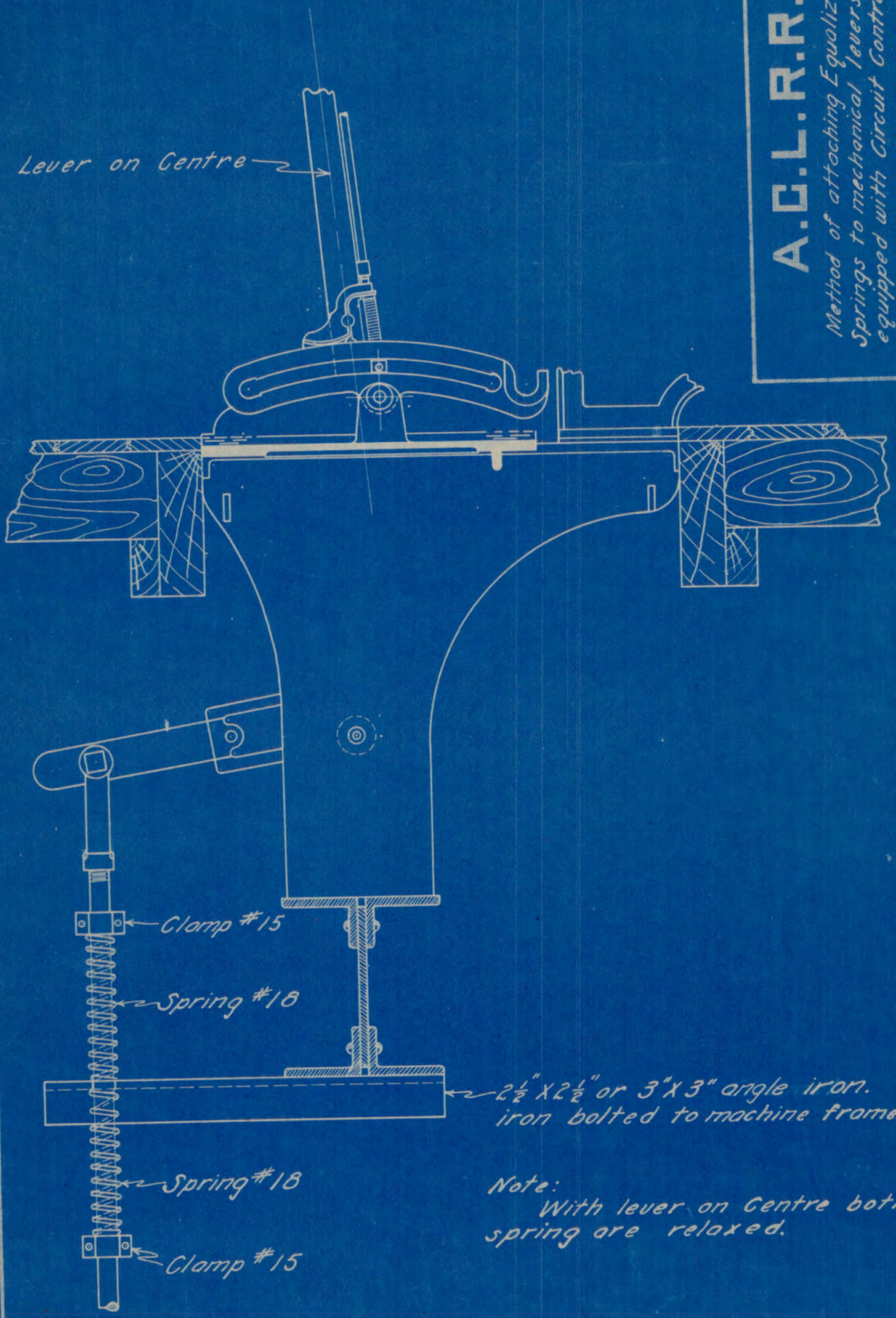
Correct _____ Supt. Signals.

Drawn Sept. 24, 1924.

A-23

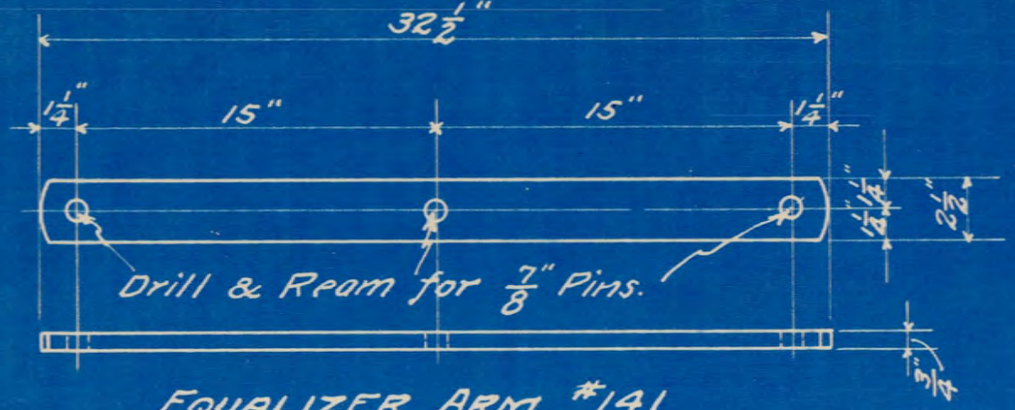
W&S 9-12 Feb 11, 29.

Sheet 5 of 9 Sheets

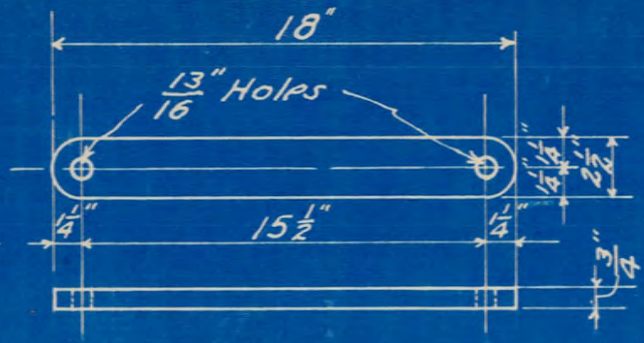


Note:
With lever on Centre both spring are relaxed.

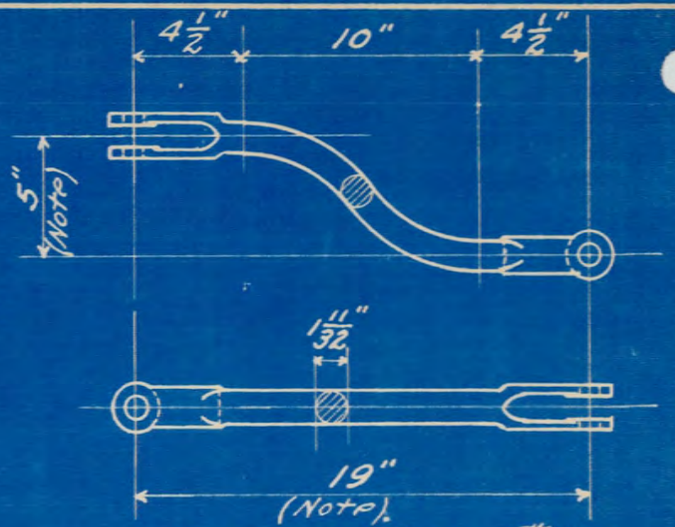
Plate 21
U.S.+S.Co. Cat. 1894



EQUALIZER ARM #141
1 Req'd.

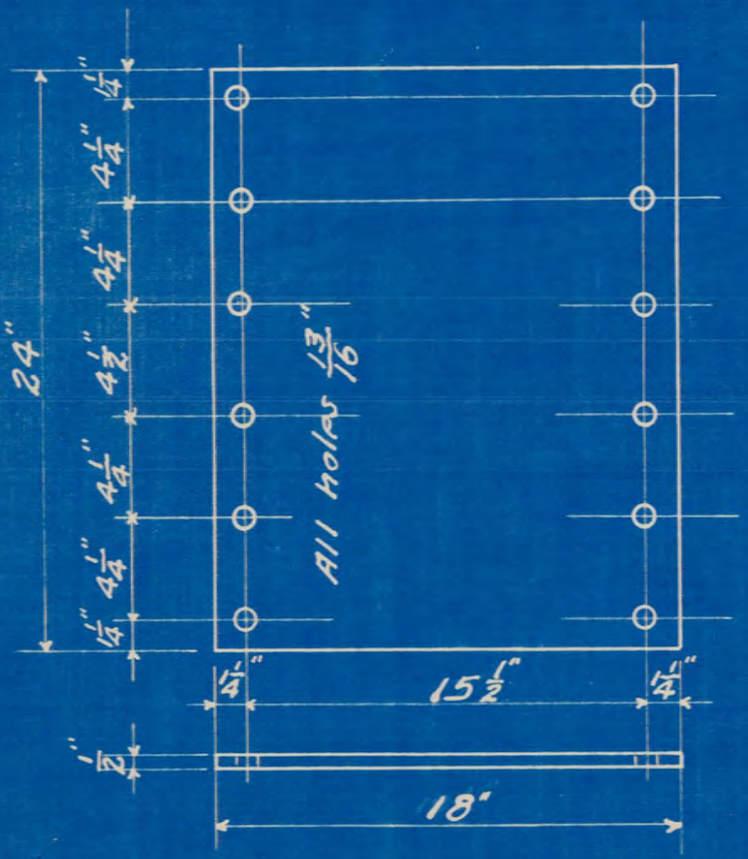


GUIDE #142
4 Req'd.

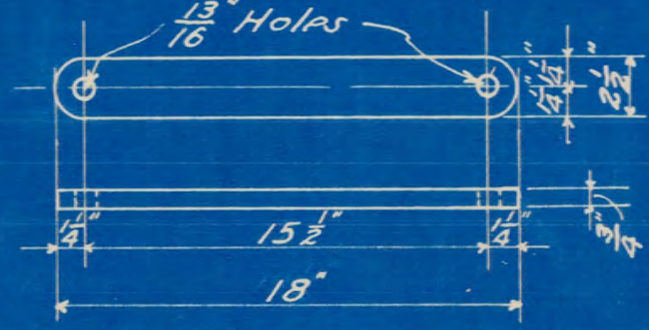


OFFSET LINK. #145
2 Req'd.

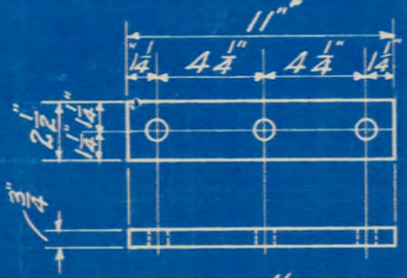
Note: These dimensions may vary.



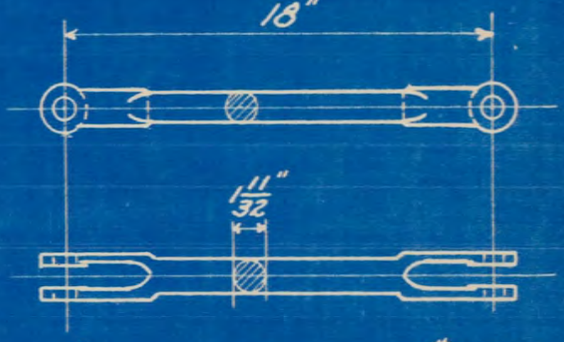
SUPPORT PLATE #146
1 Req'd.



FILLER #143
4 Req'd.



FILLER #147
4 Req'd.



STRAIGHT LINK #144
1 Req'd.

See A-38 for Std. jaws.

A. C. L. R. R.

Mechanical Selector
for
Cabin door locked Interlocking.
DETAILS

Supt. of Signals Office: Wilmington, N. C.

Approved — Chief Eng'r.

Correct — Supt. of Signals.

Drawn Oct. 18, 1929.

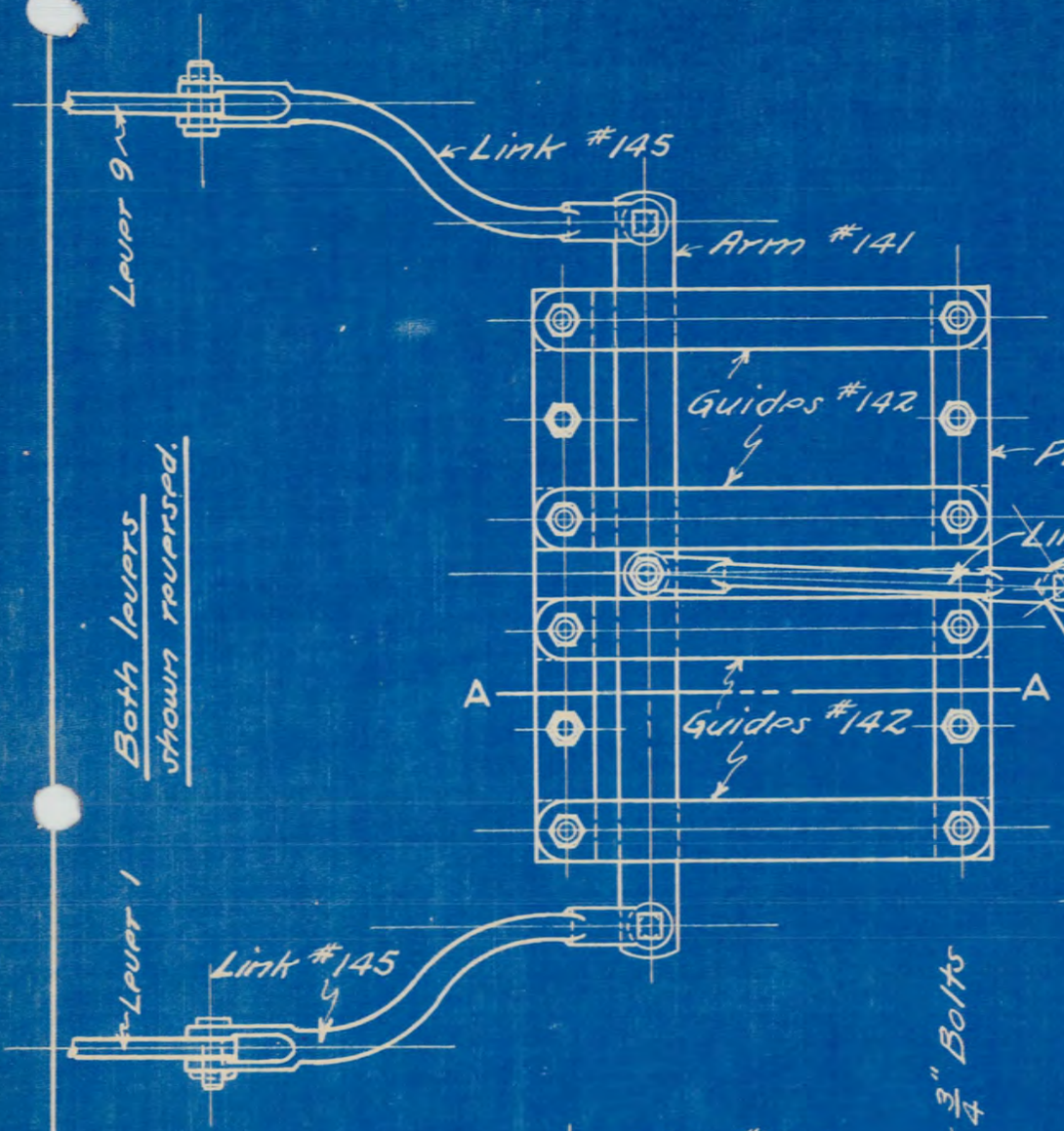
A-23

Revisions,

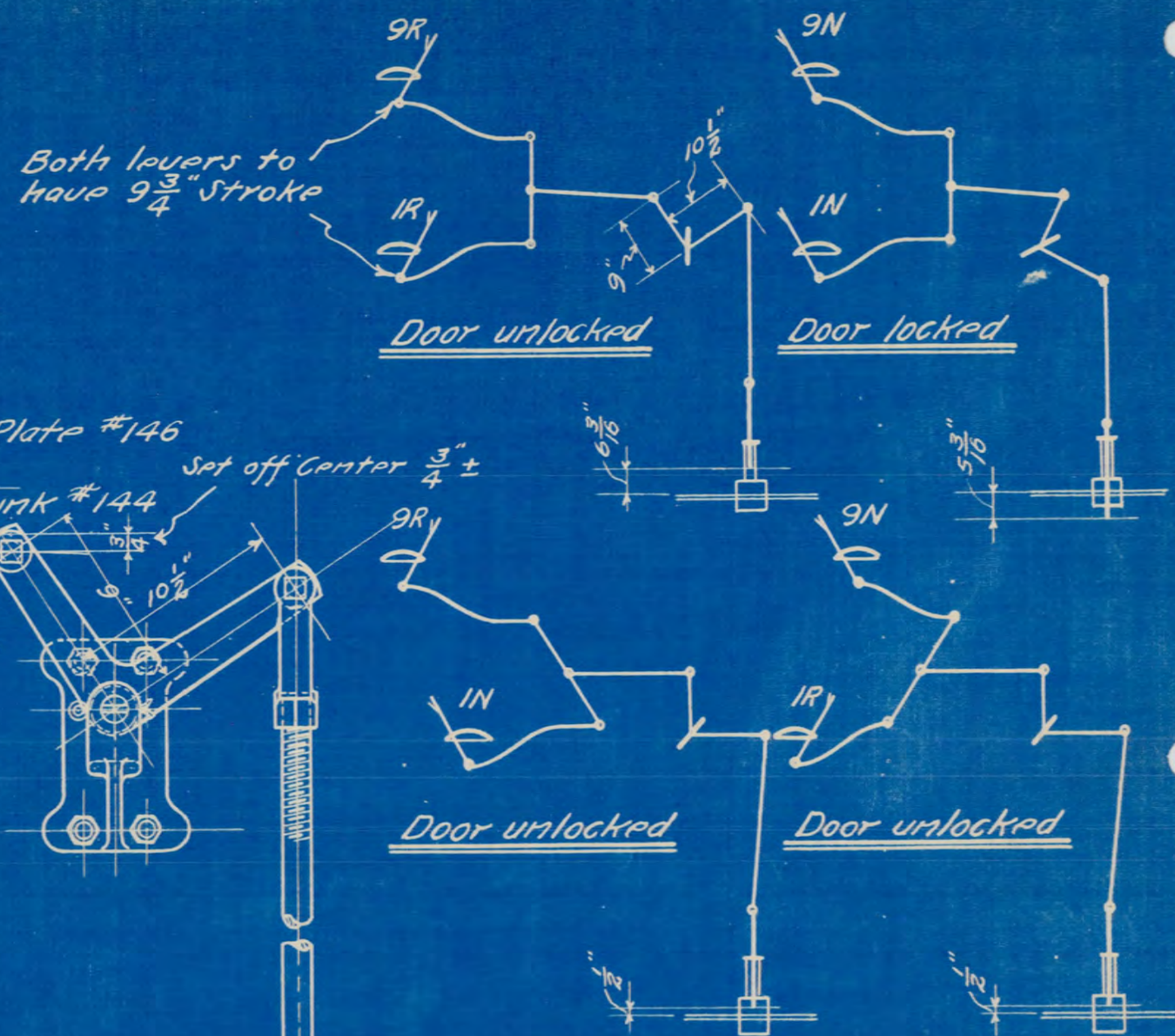
Was A-914
Oct. 18, 1932.

Scale: 1½" = 12"

Sheet 8 ___ Prints



Both levers shown reversed.



A. C. L. R. R.

Mechanical Selector for Cabin door locked Interlocking. ASSEMBLY

Supt. of Signals Office: Wilmington, N. C.

Approved — Chief Eng'r.

Correct — Supt. of Signals.

Drawn C.D.C. Oct. 18, 1929.

A-23

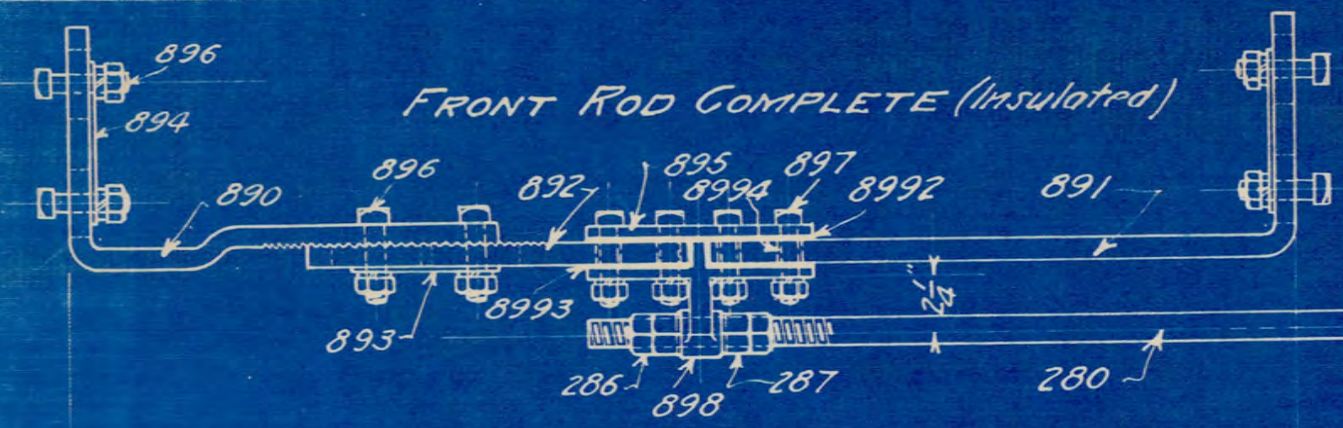
Revisions,

Was A-214 Oct. 18, 1932.

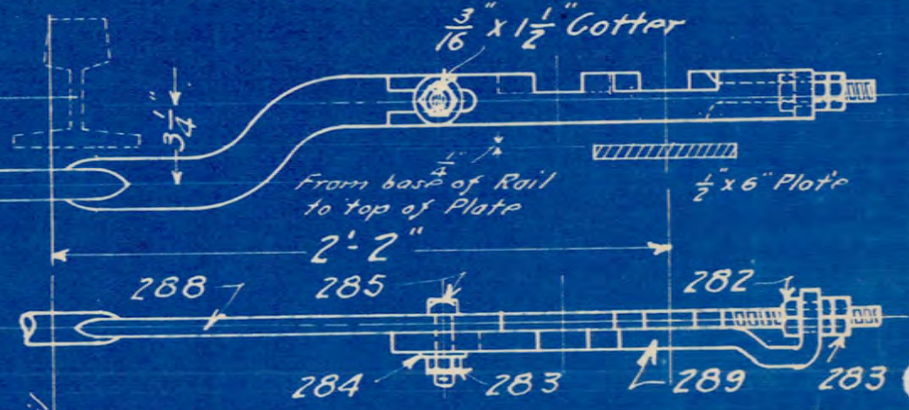
Scale: 1 1/2" = 12"

Sheet 9 ____ Prints

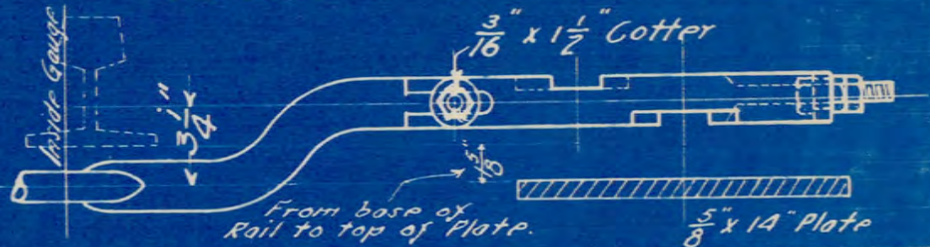
Front Rod Complete (Insulated)



F.P. Lock Rod Complete



S.L.M. Lock Rod Complete



Material Required

No.	Name	For FPL Rod	For SLM Rod	No.	Name	For Front Rod
280	Lock rod F.P.L.	1		890	Left foot	1
281	Adjustable plate	1		891	Right foot	1
288	Lock rod S.L.M.		1	892	Adjusting plate	1
289	Adjustable plate		1	893	Rod plate	1
282	Special nut	1	1	894	Foot plate	2
283	Std. ¾" hex nut	1	1	895	Connecting plate	1
284	" " washer	1	1	896	Std. ¾ x 3¼ bolt (Comp)	6
285	Std. ¾ x 2¾ bolt	1	1	897	Std. ⅝ x 3 bolt (Comp)	4
286	1¼ Jam nut	2	2	898	Lug for lock rod	1
287	1¼ Cup nut	2	2	899	" " bolt lock	
3/16" x 1½"	Cotter	1	1	8991	Plate for B.L. lug	
				8992	Fibre back plate	1
				8993	" front "	2
				8994	" bushing	4

Scale

Note for M.P.F added. 12-13-32.

Was A-100 Jan. 29, 1929.

Drawn Nov. 10, 1921.

A.C.L.R.

Stiles Patent.

Std. insulated front rod, F.P. Lock rod and S.L.M. Lock rod. Assembly.

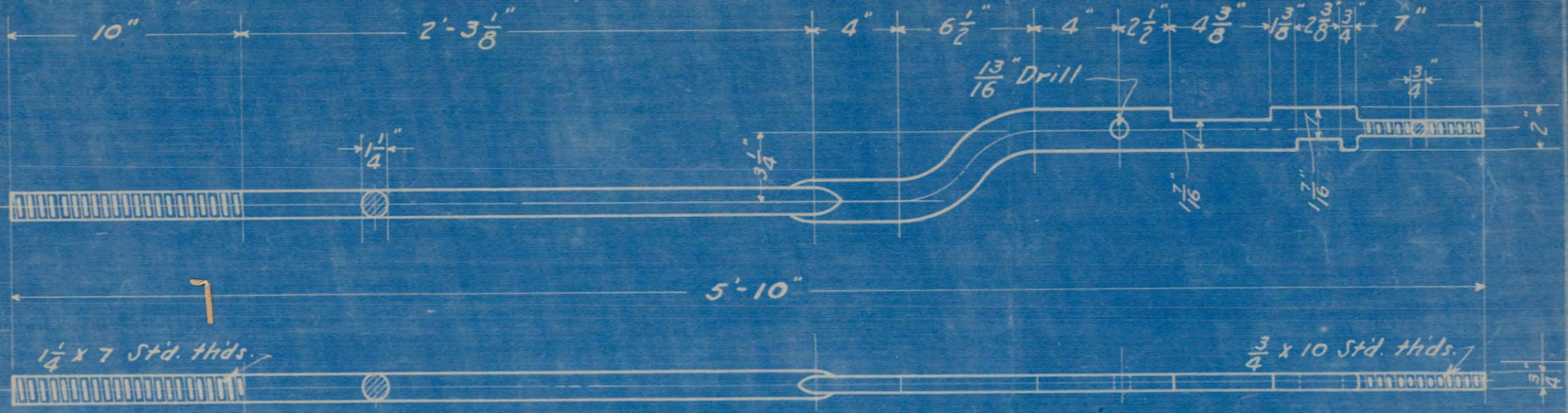
Signal Engrs. Office Wilmington N.C.

Approved Correct

Supt. of Signals.

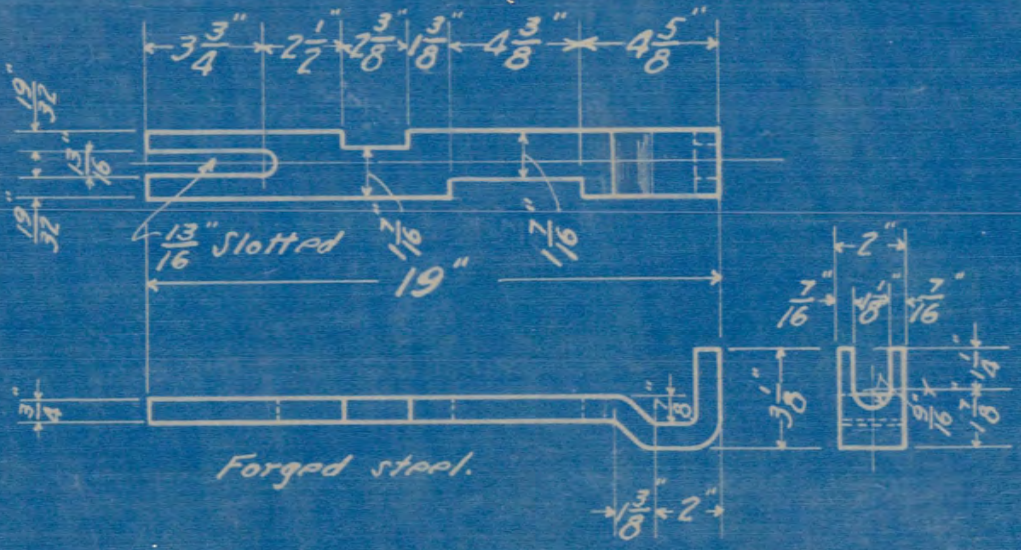
A — 28

Sheet 1 of 6



S. L. M. Lock Rod #288

Forged steel.



Forged steel.

ADJUSTABLE LOCK PLATE #289

Note:
See Sheet 1 for special nut, Nuts, Bolts and washers. For Assembly, Sheet 1

A.C.L.R.R.

Std. adjustable lock rod for switch & lock movements.

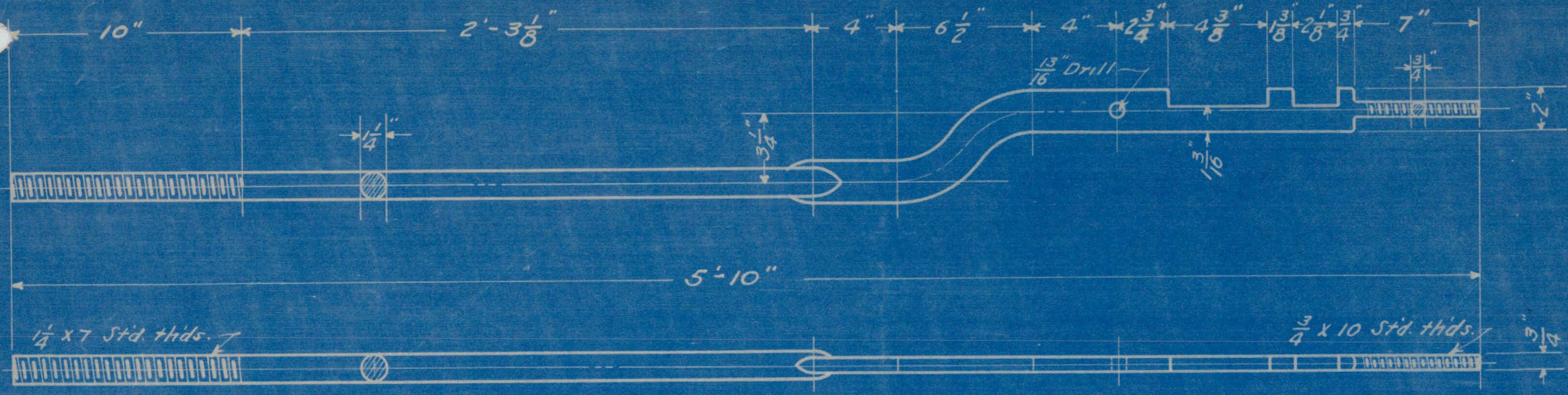
Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr. Supt. of Signals.

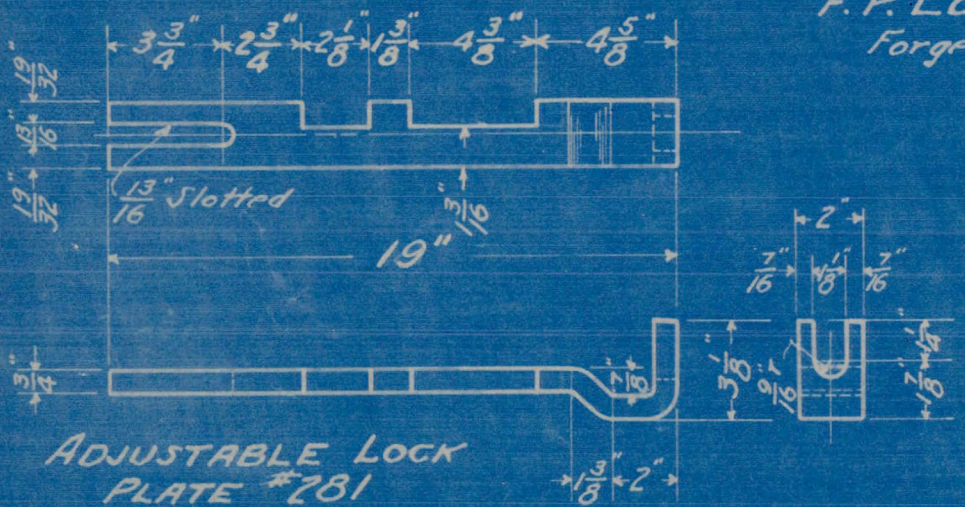
Lock Plate was 18" long. Now 19" Dec. 13, 1921.	Supersedes A-28 of Sept 9, 1914.	Drawn C.L.H. Oct. 26, 1921.		A—28

Scale 2" = 12"



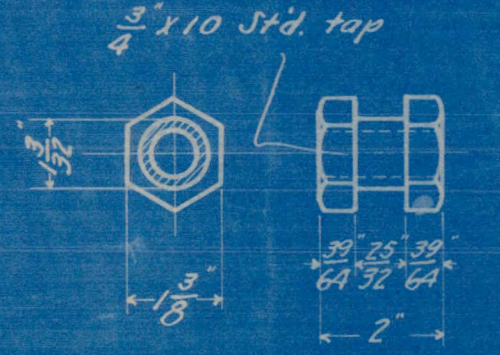
F. P. Lock Rod #280

Forged steel.



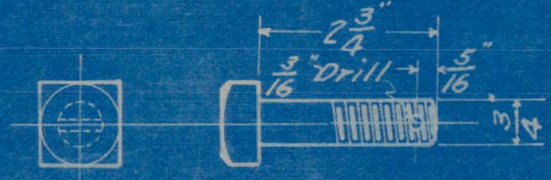
Adjustable Lock Plate #281

Forged steel.



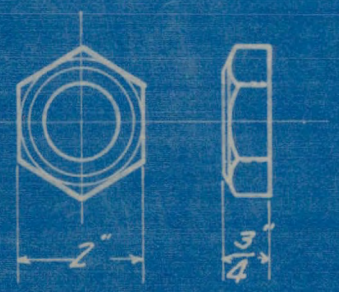
Special Nut #282

C.R. Steel.



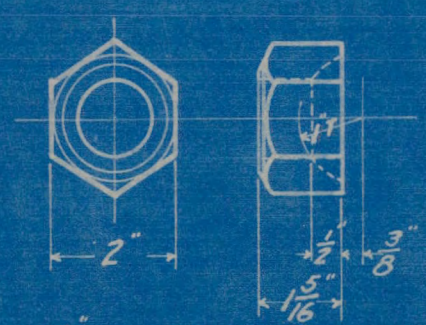
Std. 3/4" x 2 3/4" Sq. Hd. bolt.

#285



1 1/4" x 7 Jam Nut.

#286



1 1/4" x 7 Cup Nut

#287

Scale 2" = 12"

For Assembly, Sheet 1

A.C.L.R.R.

Std. flat type adjustable lock rod for facing point locks.

Signal Engrs. Office Wilmington, N.C.

Approved Correct

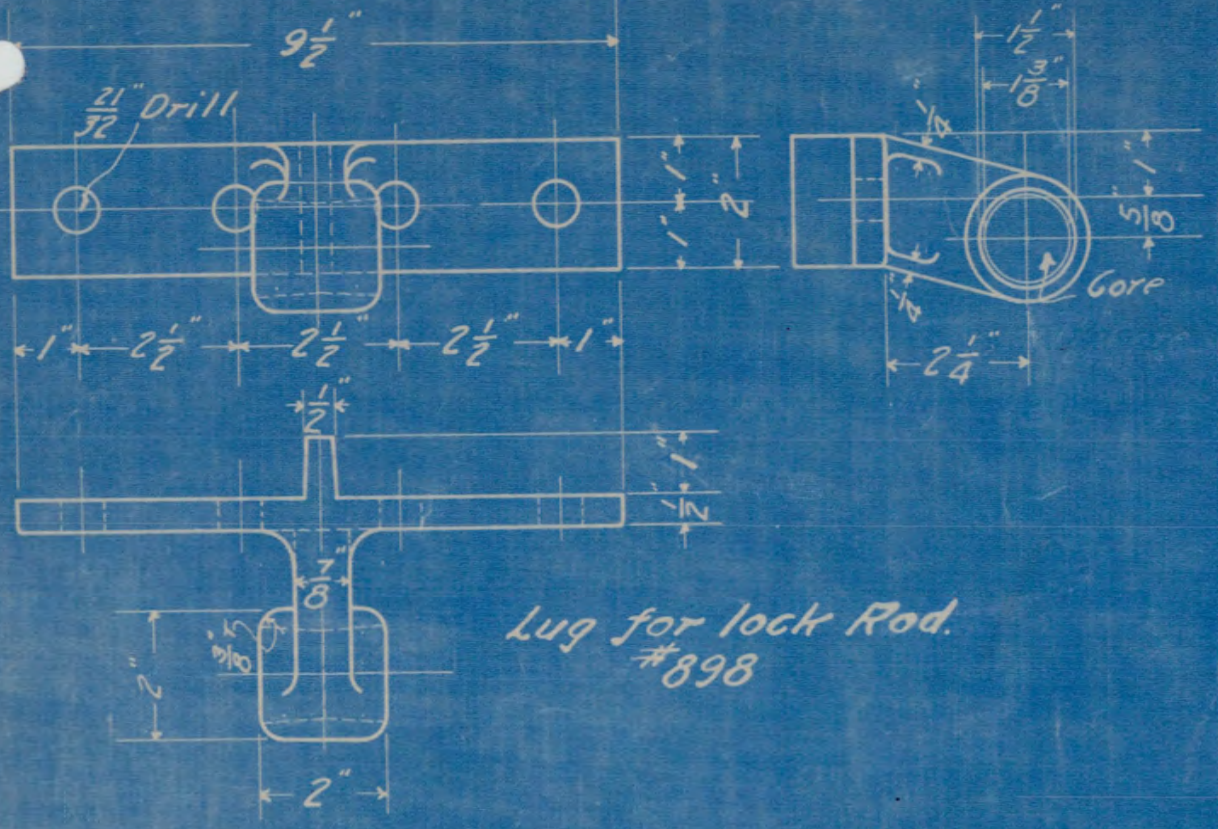
Chief Engr. Supt. of Signals.

Drawn Oct. 26, 1921.

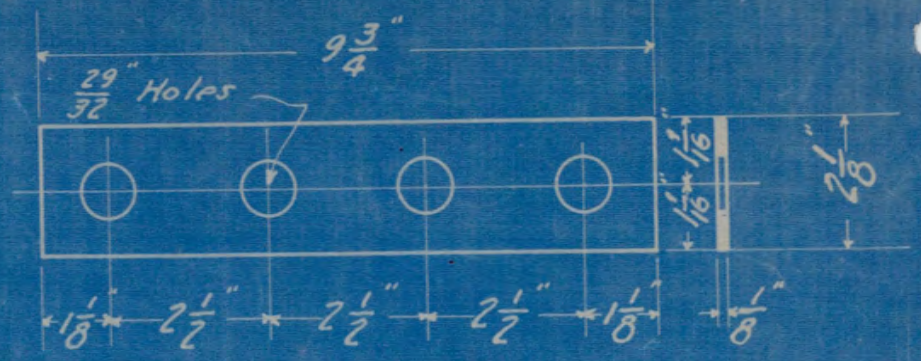
A—28

Lock Plate was 18" long. Now 19" Dec. 13, 1921.

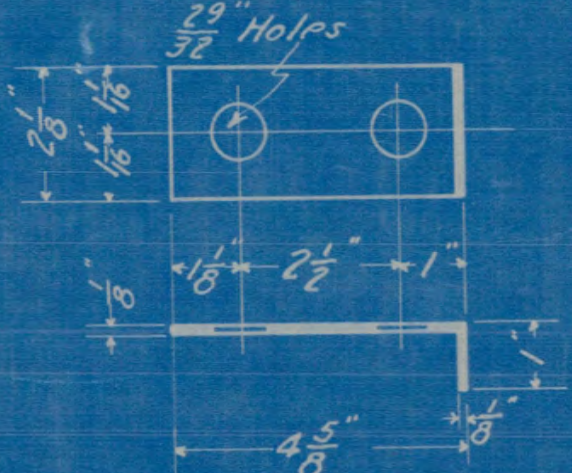
Supersedes A-28 of Sept. 9, 1914.

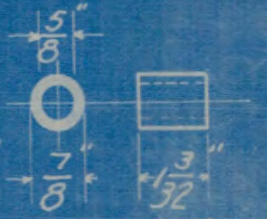


Lug for lock Rod.
#898

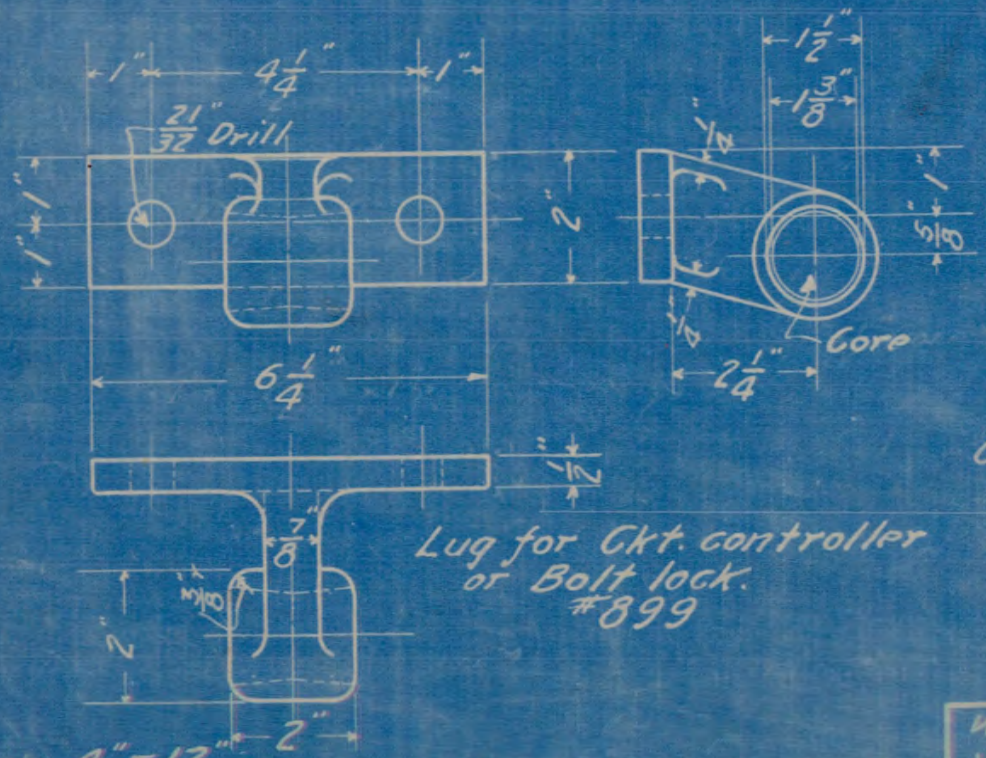


Fibre back plate.
#8992





Fibre bushing.
#8994



Lug for Ckt. controller or Bolt lock.
#899

Ckt. controller or Bolt lock Lug Plate.
#8991

Fibre front plate
#8993

For assembly, Sheet 1.

A.C.L.R.R.

Std. Lugs & fibre insulations for lock rod & Ckt. Con. Rods. Stiles Patent.

Signal Engrs. Office, Wilmington, N.C.

Approved: Chief Engr.

Correct: Supt. of Signals.

Drawn: Oct. 31, 1921.

Was A-89 JAN. 29, 1929.

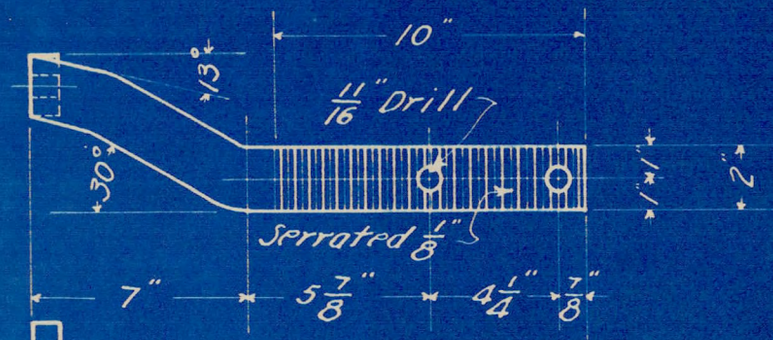
Supersedes A-89 of June 19, 1917.

A—28

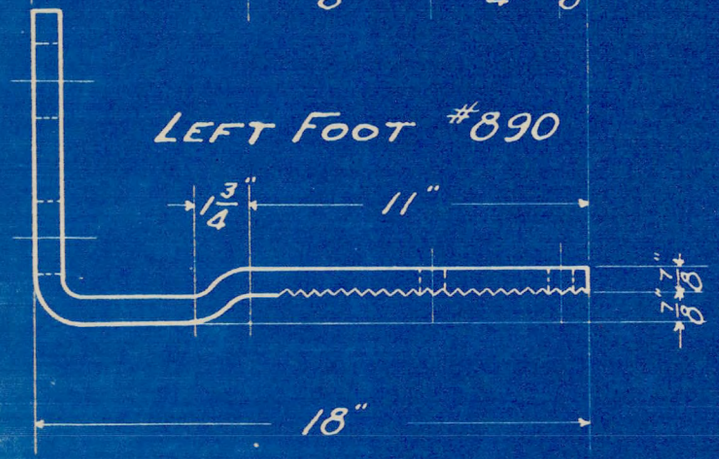
Scale 4" = 12"

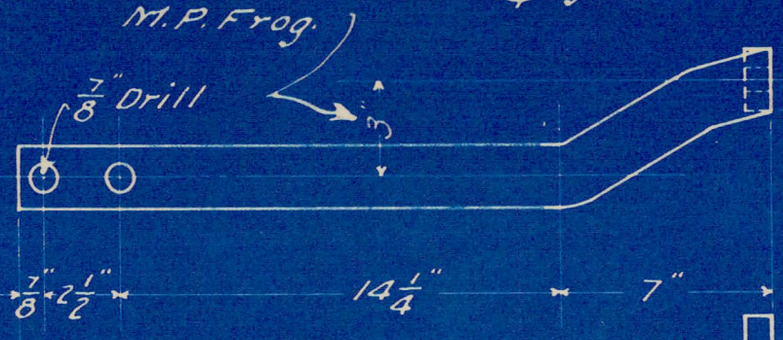
Sheet 4 of 5 sheets.

NOTE: This should be $4\frac{1}{4}$" for M.P. Frog.

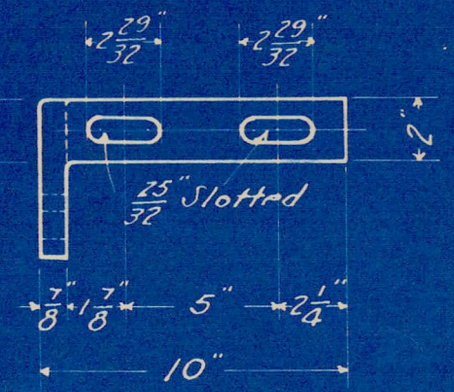


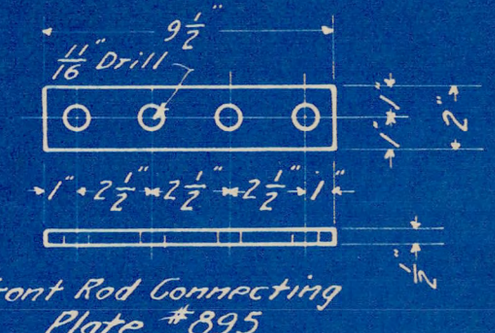
LEFT FOOT #890



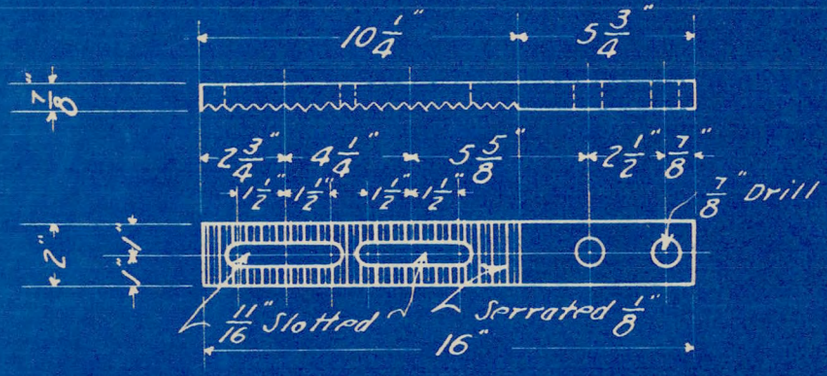


RIGHT FOOT #891

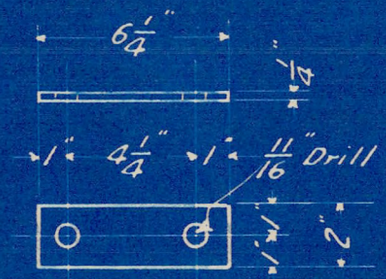




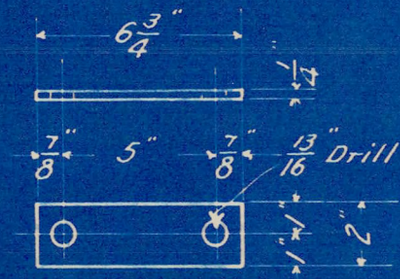
Front Rod Connecting Plate #895



Front Rod Adjusting Plate #892



Rod Plate #893



Foot Plate #894

For Assembly, Sheet 1.

A.C.L.R.R.

Std. Front Rod. (Insulated)

Signal Engrs. Office, Wilmington, N.C.

Approved

Correct

C. H. Ellerbrock

Supt. of Signals.

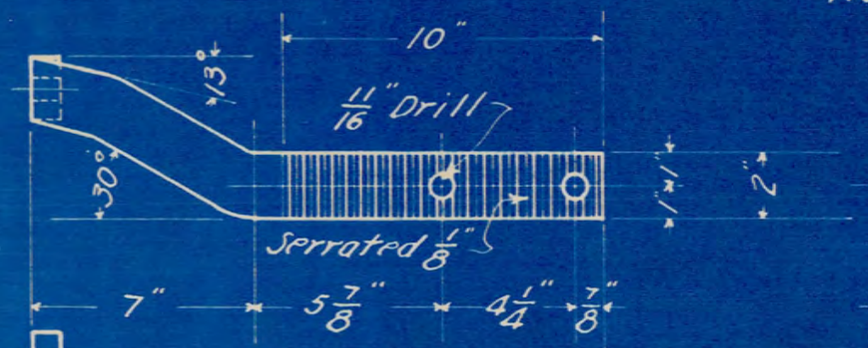
Scale 2" = 12"

Note for MPF added 12-13-32.

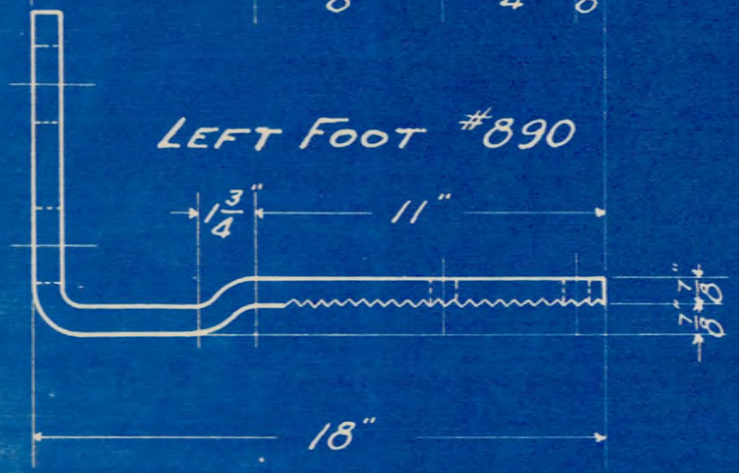
Was A-89 Jan. 29, 1929.	Supersedes A-89 of June 19, 1917.	Drawn C.C.W. Oct. 28, 1921.	A — 28

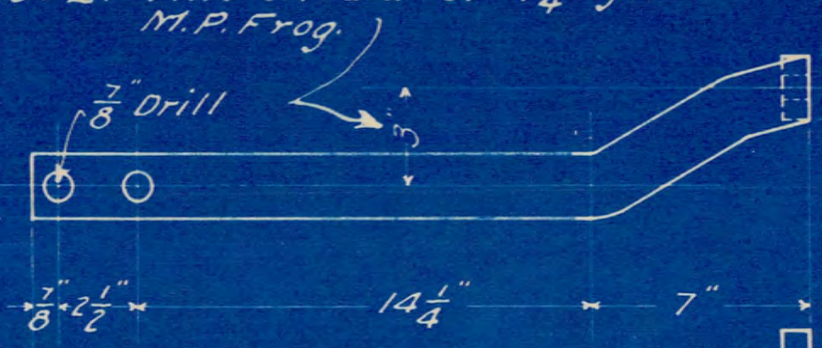
Sheet 5 of 6 Sheets.

NOTE: This should be $4\frac{1}{4}$" for M.P. Frog.

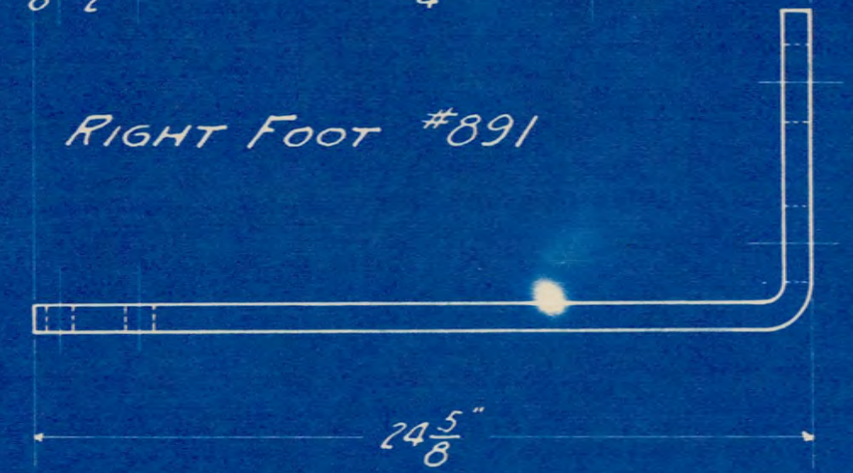


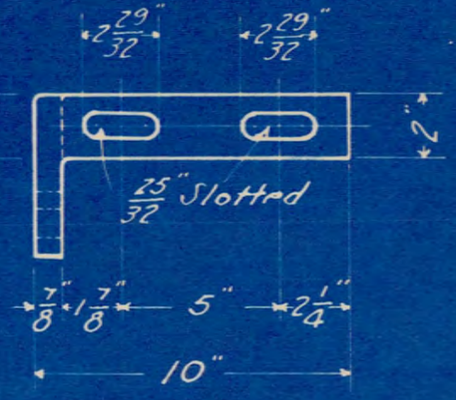
LEFT FOOT #890

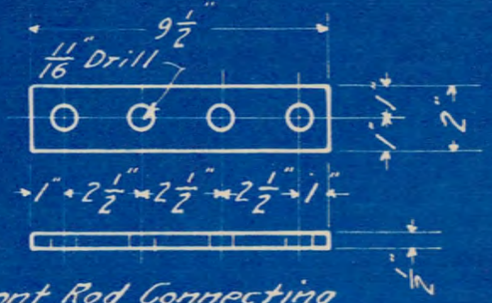




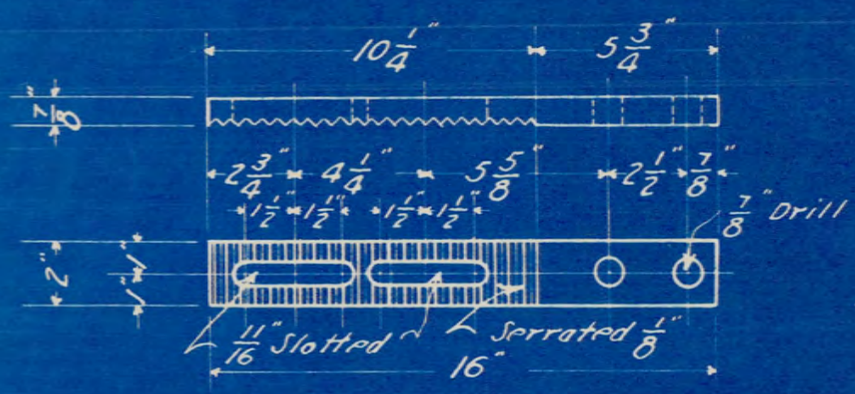
RIGHT FOOT #891



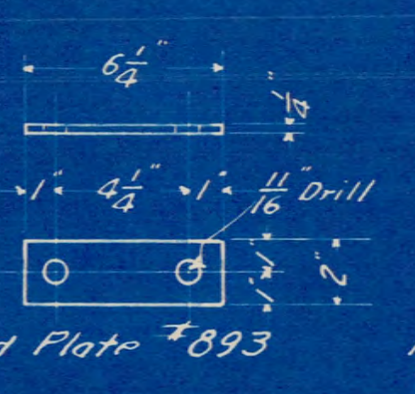




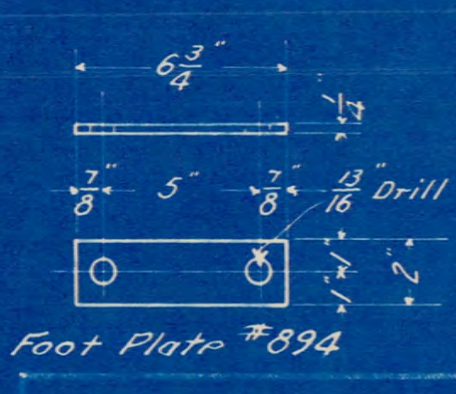
Front Rod Connecting Plate #895



Front Rod Adjusting Plate #892



Rod Plate #893



Foot Plate #894

For Assembly, Sheet 1.

Note for MPF added. 12-13-32.

Was A-89 JAN. 29, 1929.	Supersedes A-89 of June 19, 1917.	Drawn C.C.W. Oct. 28, 1921.	A—28

Scale 2" = 12"

A.C.L.R.R.

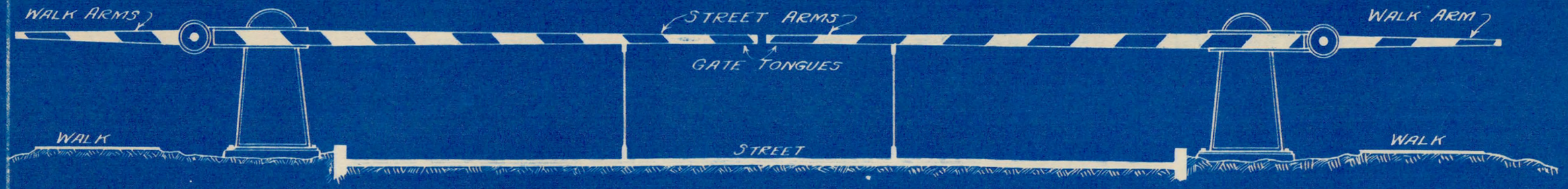
Std. Front Rod. (Insulated)

Signal Engrs. Office Wilmington, N.C.

Approved Correct

S. J. Mellonay

Supt. of Signals.



NOTES;

ALL CROSSING GATES SHALL BE PAINTED WITH ALTERNATE STRIPES, BLACK & WHITE OF 12" WIDTH, PLACED AT AN ANGLE OF 45°, POINTING DOWNWARD TOWARD THE CENTER OF THE HIGHWAY, WHEN GATES ARE ACROSS STREET.

IN PAINTING GATES BEGIN STRIPES AT TIP AS SHOWN.

A.C.L.R.R.

STD. METHOD OF PAINTING CROSSING GATES

Signal Engrs Office Wilmington, N.C.

Approved Correct

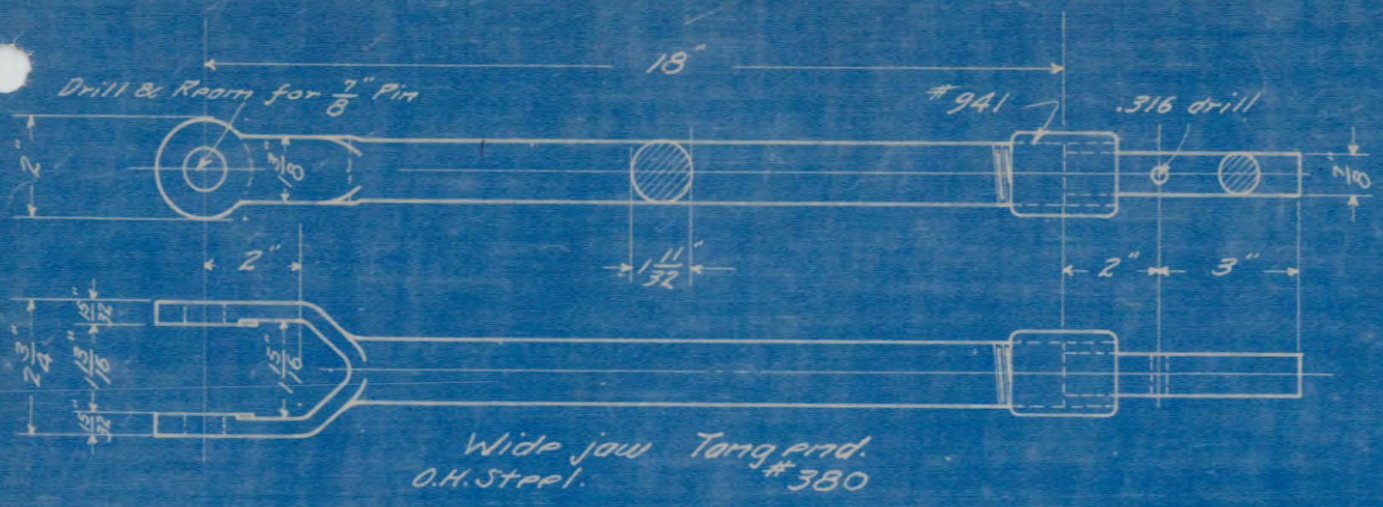
Chief Engr Supt of Signals

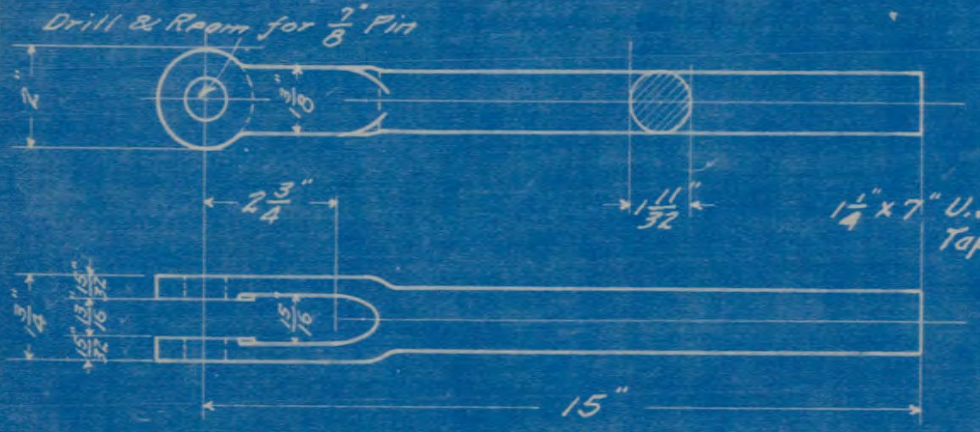
Scale $\frac{1}{2}$" = 12"

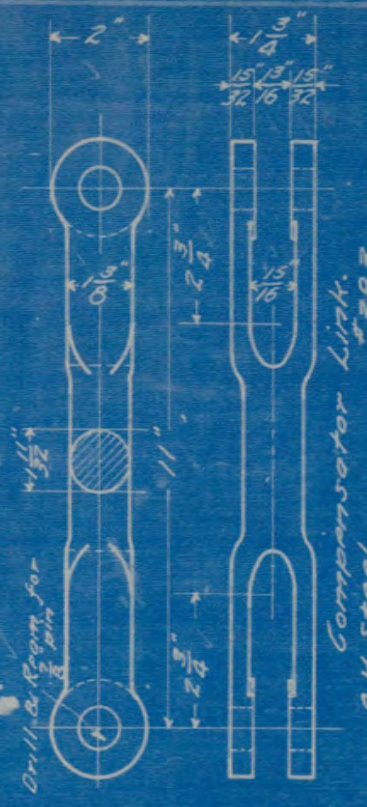
SUPERSEDES A-57 OF OCT. 14, 1916

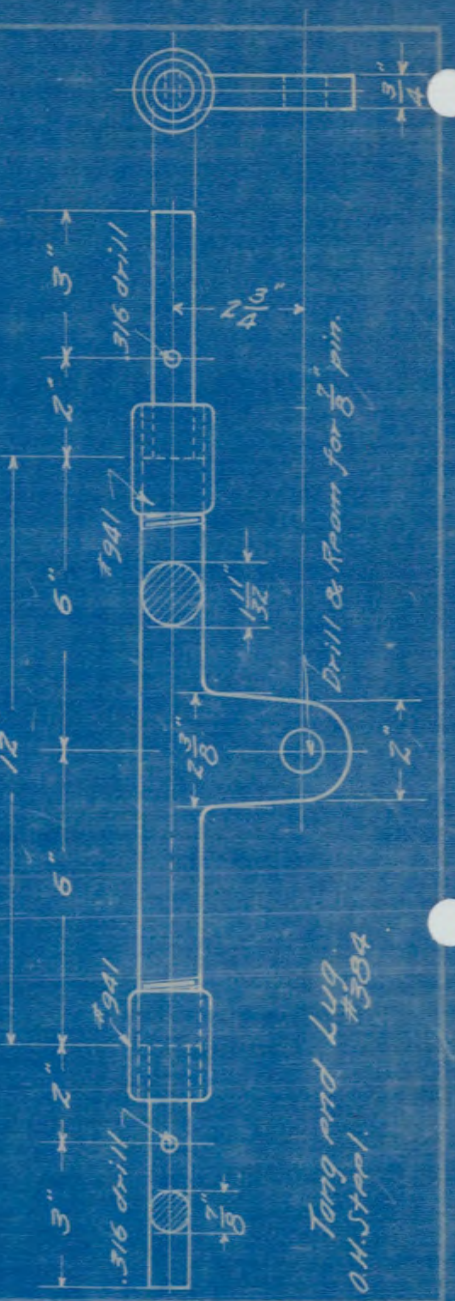
Drawn C.A.W. APRIL 5, 1929

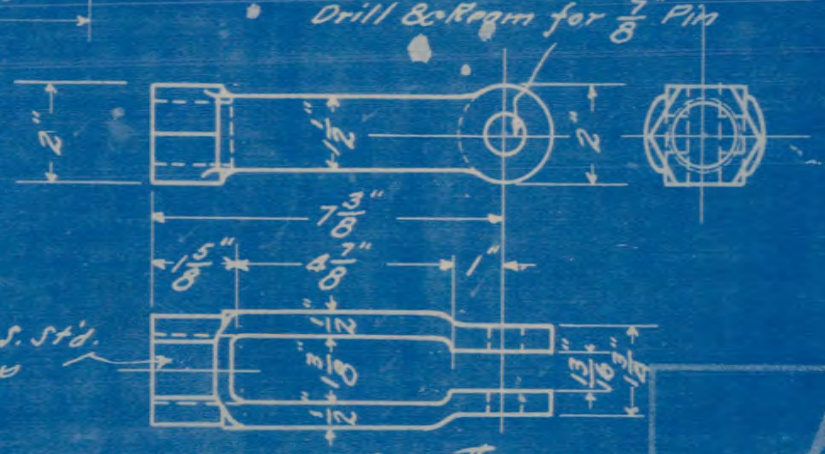
A-30

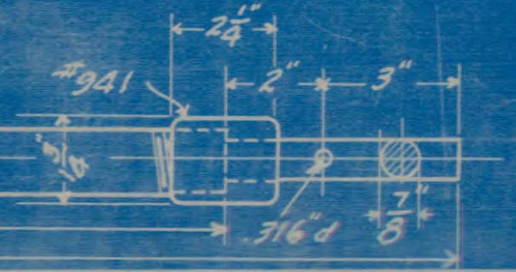












A.C.L.R.R.

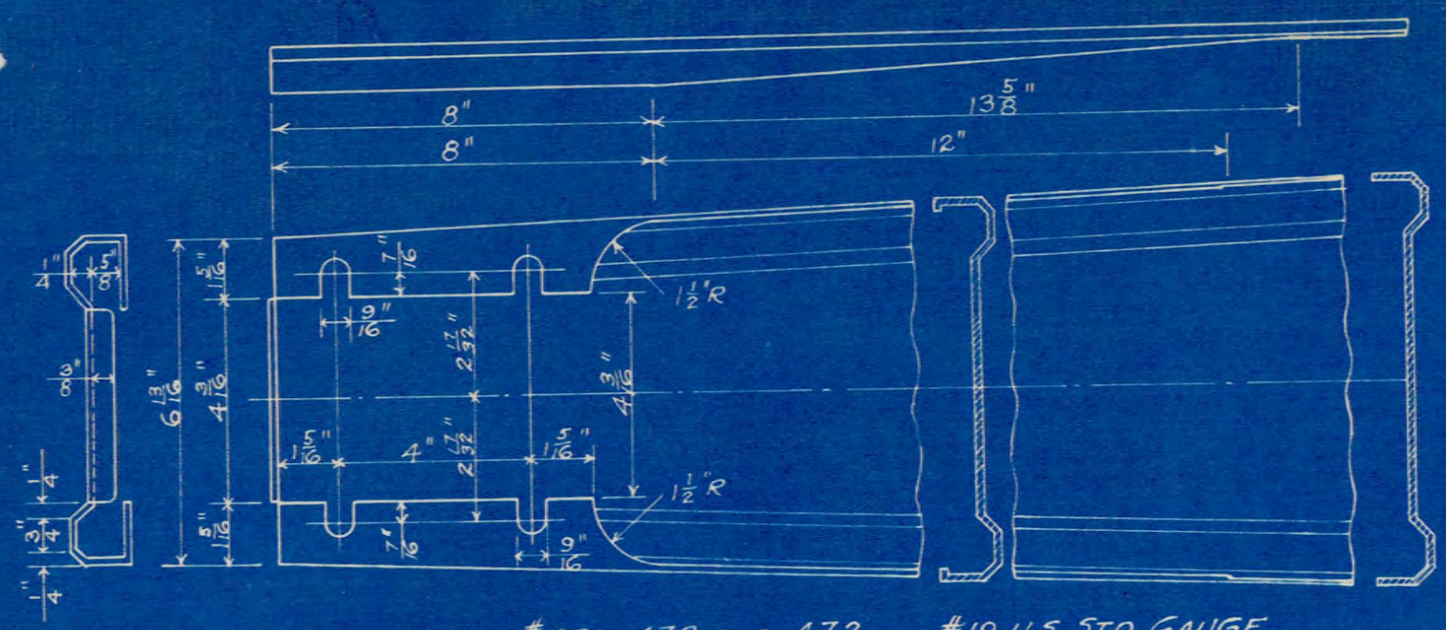
Std. tong & plain end jaws,
Tong end Lug & Comp. Link.
Str. threaded tong & Screw jaw.

Signal Engrs. Office Wilmington N.C.

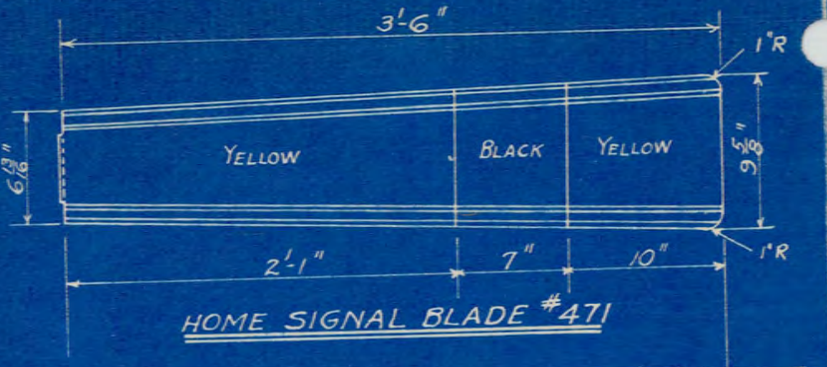
Approved _____ Chief of Engr.

Correct _____ Signal Engr.

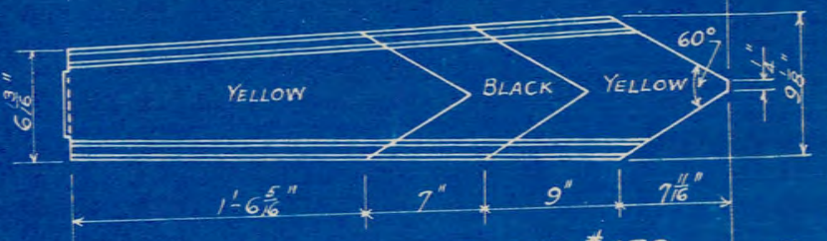
Screw Jaw & Str. Thrd. Tong end added. Oct. 26, 1928.	Supersedes A-38 of Mar. 11, 1908.	Drawn July 5, 1917.	A— 38



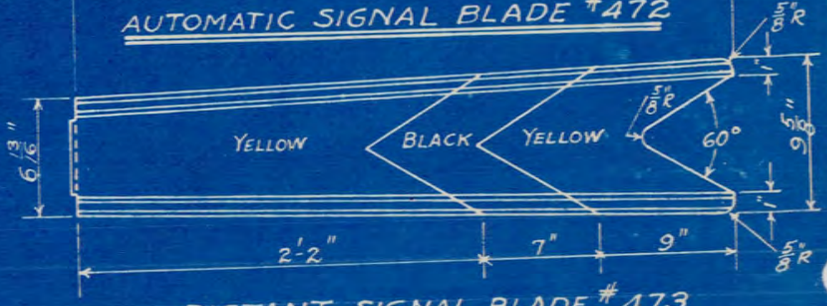
DETAIL OF BLADES #471, 472 AND 473. #18 U.S. STD. GAUGE.



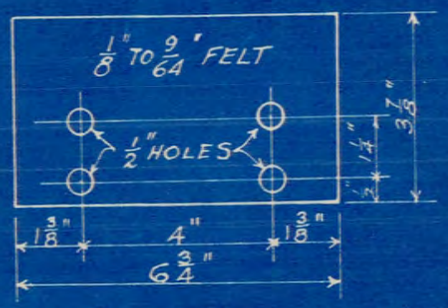
HOME SIGNAL BLADE #471



AUTOMATIC SIGNAL BLADE #472

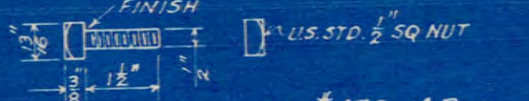


DISTANT SIGNAL BLADE #473

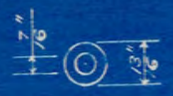


FELT #475. 2 REQUIRED

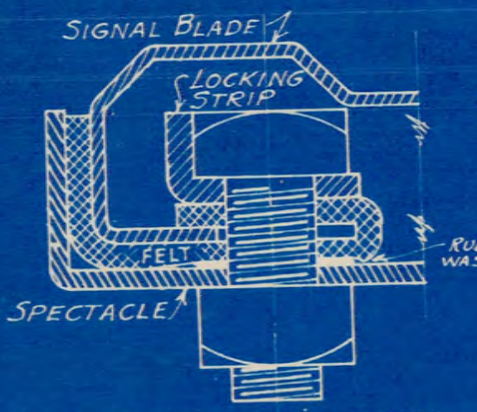
LOCKING STRIP #476. - 2 REQ.



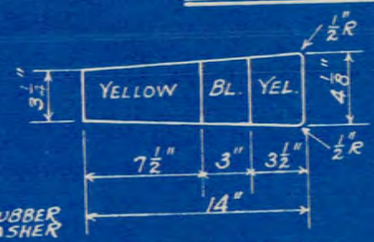
SPECIAL TAP BOLT #478. 4 REQ.



5/32" RUBBER WASHER #477
4 REQUIRED

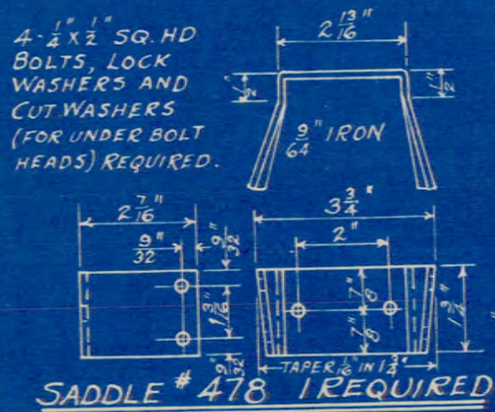


APPLICATION OF SIGNAL BLADE TO SPECTACLE.



DWARF SIGNAL BLADE #474

NOTE: FRONT OF ALL BLADES TO BE ENAMELED YELLOW, WITH BLACK STRIPE, AS SHOWN.
BACK OF ALL BLADES TO BE ENAMELED BLACK.



SADDLE #478 1 REQUIRED

DETAIL OF BLADE #474. #16 U.S. STD. GAUGE.

A.C.L.R.R.

LAVAR ENAMELED STEEL SIGNAL BLADES

Signal Engrs. Office Wilmington, N.C.

Approved. Correct

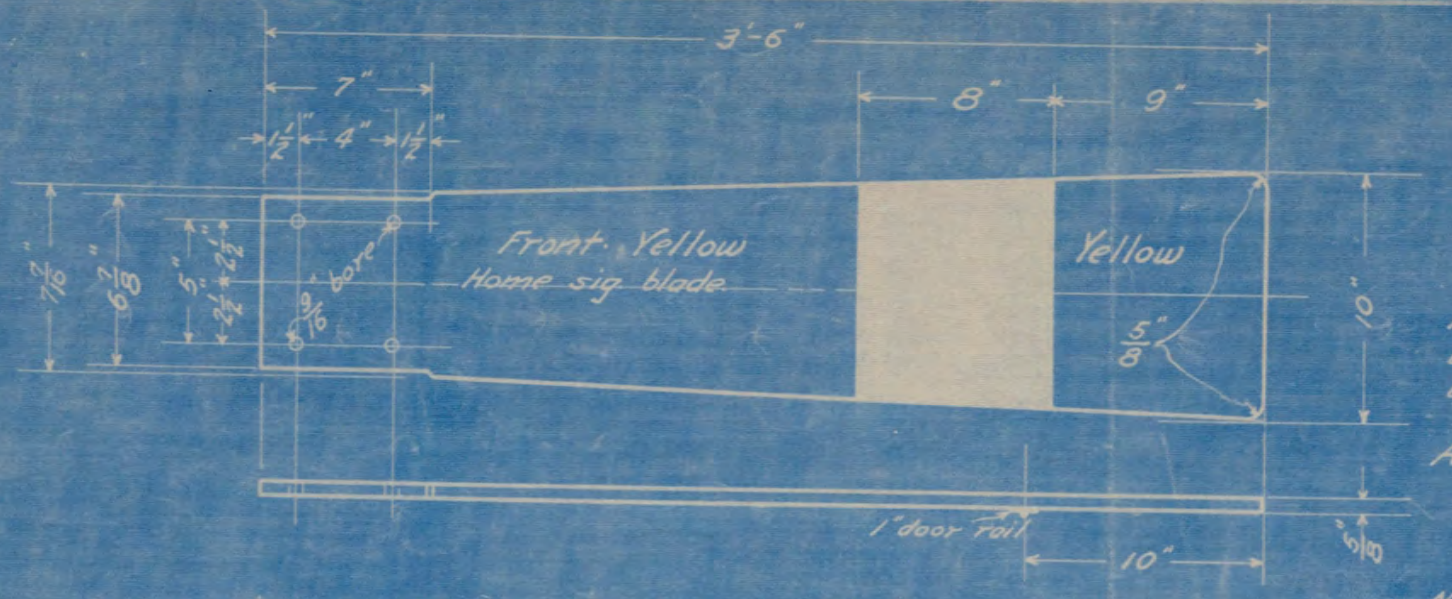
Chief Engr. Signal Engr.

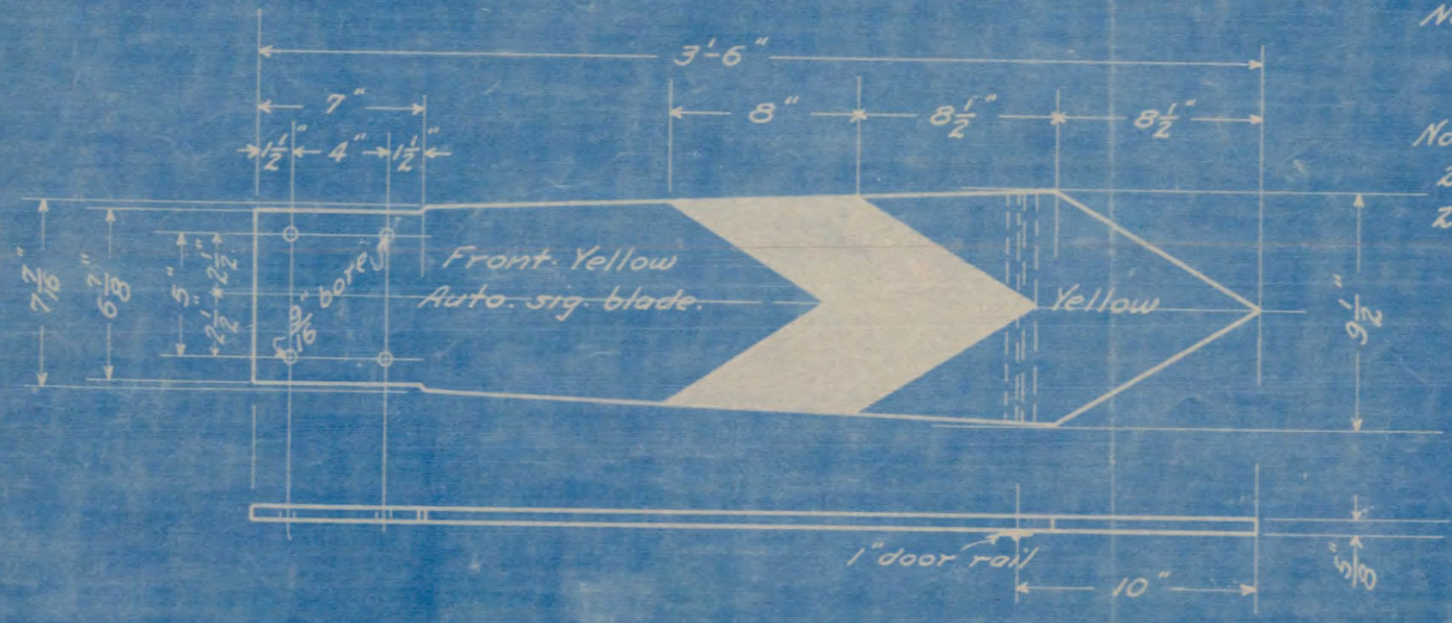
Drawn: E.J.S.
Nov. 10, 1926.

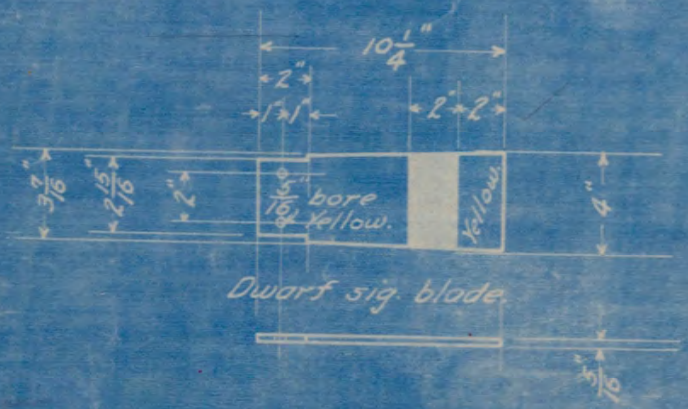
A-47

Scale 1" & 3" = 1'-0"

NOTE:- THESE BLADES ARE PATENTED, MANUFACTURED AND SOLD BY THE RAILROAD ACCESSORIES CORPORATION.







Dwarf sig. blade.

All home, automatic and dwarf signal blades shall be made of first quality white pine, poplar or bass.

All blades shall be painted as follows:
Paint fronts yellow with black stripe.
" backs black.

Note: Back of blades shall be the side with the 1" door rail.

Note:- Blades to be painted,
2 Coats of white lead and oil.
2 " " German Ripolin Enamel.

A.C.L.R.R.

Std. wooden home, automatic and dwarf signal blades.

Signal Engrs. Office. Wilmington, N.C.

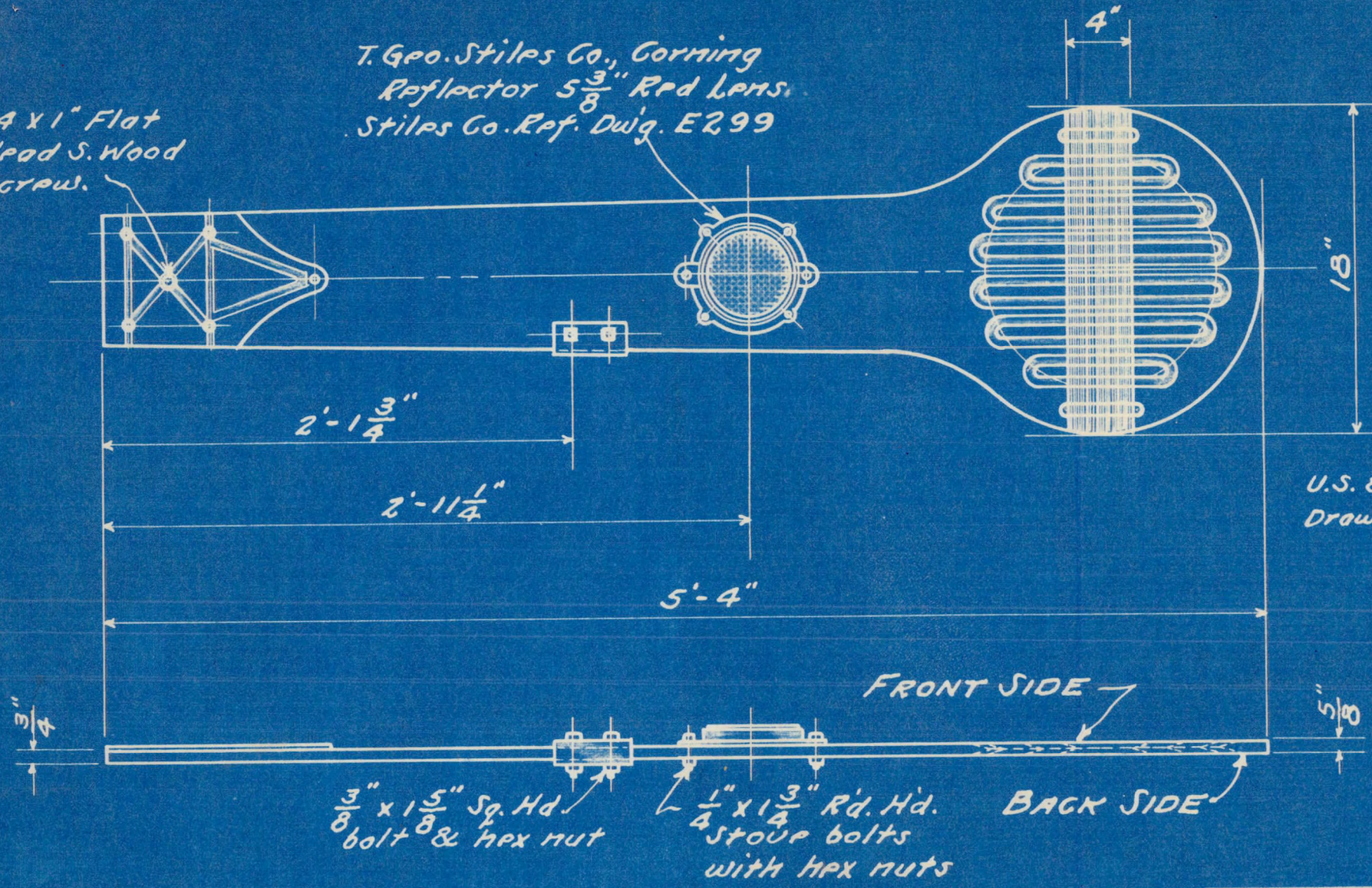
Approved Correct

Chief Engr. Signal Engr.

Revisions.

BACK OF BLADES PAINTED BLACK ONLY. NO STRIPE. WAS A-15. 11-1760	End of Home Sig. blade rounded. Mar. 1, 1912.	Supersedes A-15 of Apr. 13, 1910	Drawn Eastf. Feb. 4, 1911		A—47

Scale 1½" = 12"



U.S. & S. Co. Ref.
Drawing S4328 Sh. 1

PAINTING

FRONT SIDE YELLOW WITH BLACK STRIPE
BACK " BLACK " WHITE "

A. C. L. R. R.

ST'D. SIGNAL SMASH BOARD BLADE WITH REFLECTOR LENS.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

Revisions,

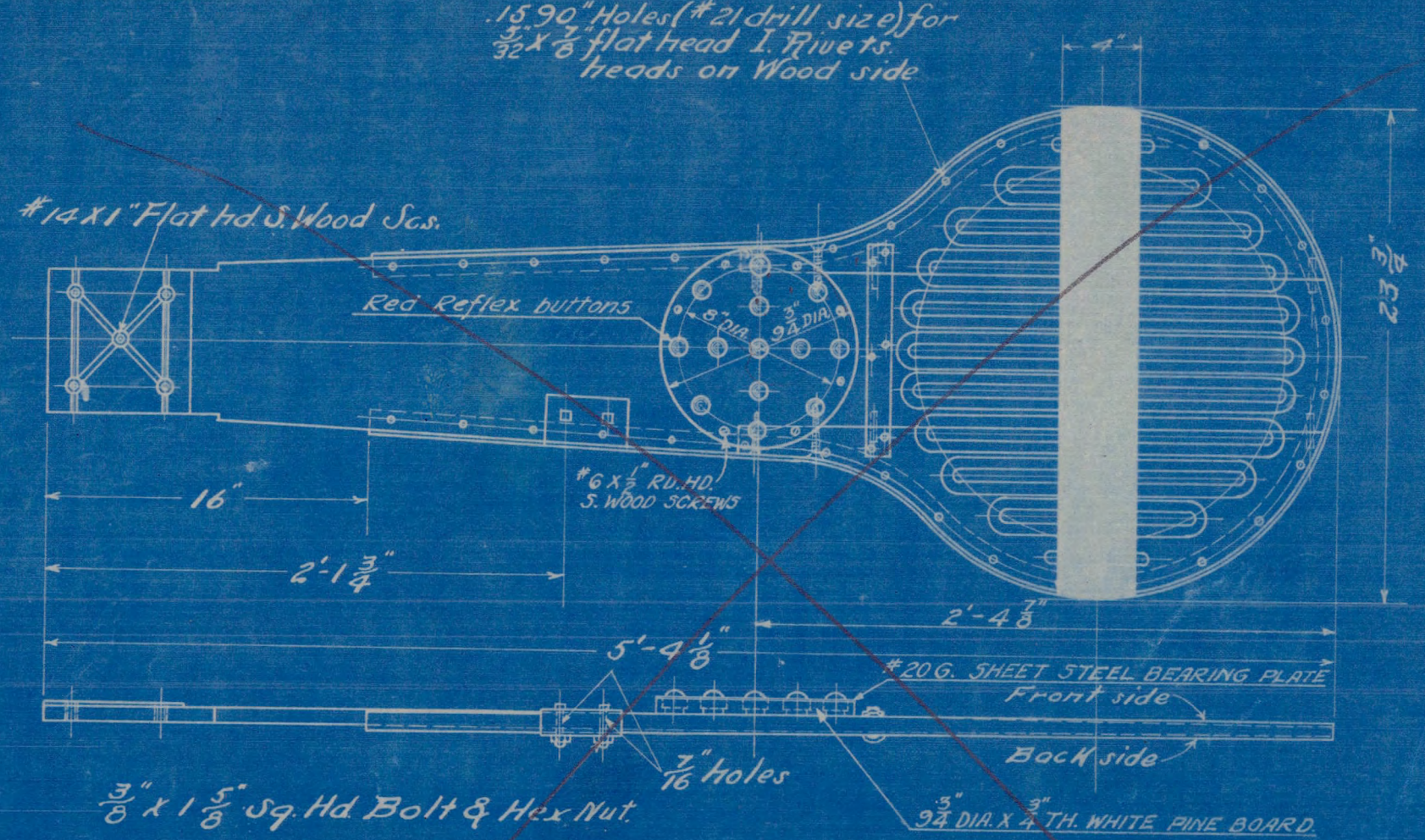
Supersedes A-47 Sh. 3 of 8-22-23.

Drawn C.A.W. JAN. 4, 1935.

A- 47

Scale: 1 1/2" = 12"

Sheet 3 of ____. ____ Prints


.1590" Holes (#21 drill size) for 3/32 x 7/8" flat head I. Rivets. heads on Wood side
#14 x 1" Flat hd. S. Wood Scs.
Red Reflex buttons
8" DIA.
3" 9/4 DIA.
#6 x 1/2" RD. HD. S. WOOD SCREWS
16"
2'-1 3/4"
5'-4 1/8"
4"
23 3/4"
2'-4 7/8"
#20 G. SHEET STEEL BEARING PLATE
Front side
Back side
7/16" holes
3/8" x 1 5/8" Sq. Hd. Bolt & Hex Nut.
3/4" DIA. x 3/4" TH. WHITE PINE BOARD.

Note:
Front side painted yellow with black stripe.
Back " " black " white " .

A.C.L.R.R.

Std. Sig. Smash Board Blade

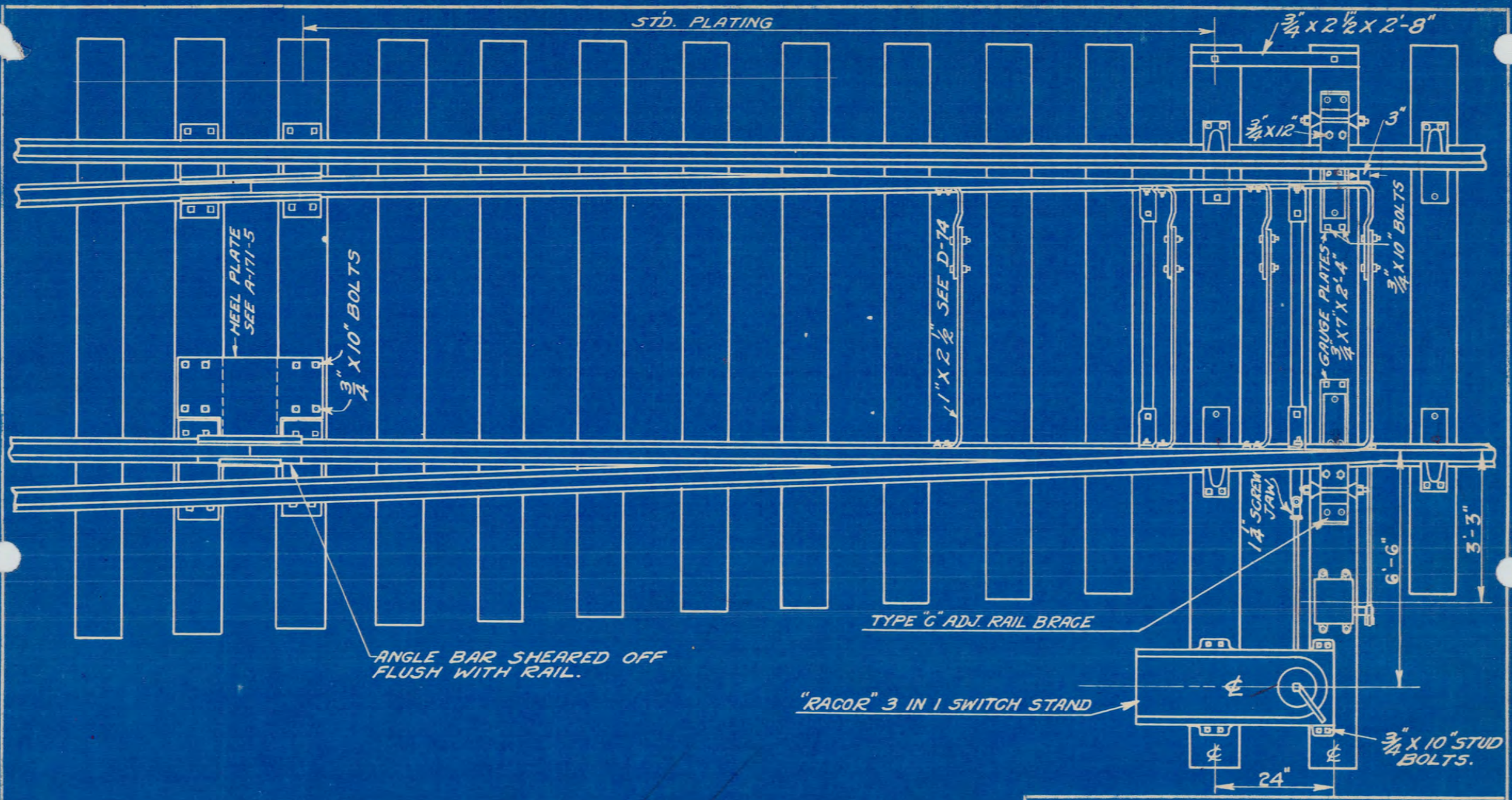
Signal Engrs. Office Wilmington, N.C.

Approved _____ Chief Engr.

Correct G Holloway Supt. Signals.

Scale	REFLEX SIGN ADDED. 7-18-30.	Was A-119 Feb. 9, 1929.	Supersedes A-119 of Dec. 12, 1910.	Drawn Aug. 22, 1923.		A-47

Sheet 3 of 3



A. C. L. R. R.

SWITCH LAYOUT USING THE "RACOR" 3 IN 1 SWITCH STAND

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

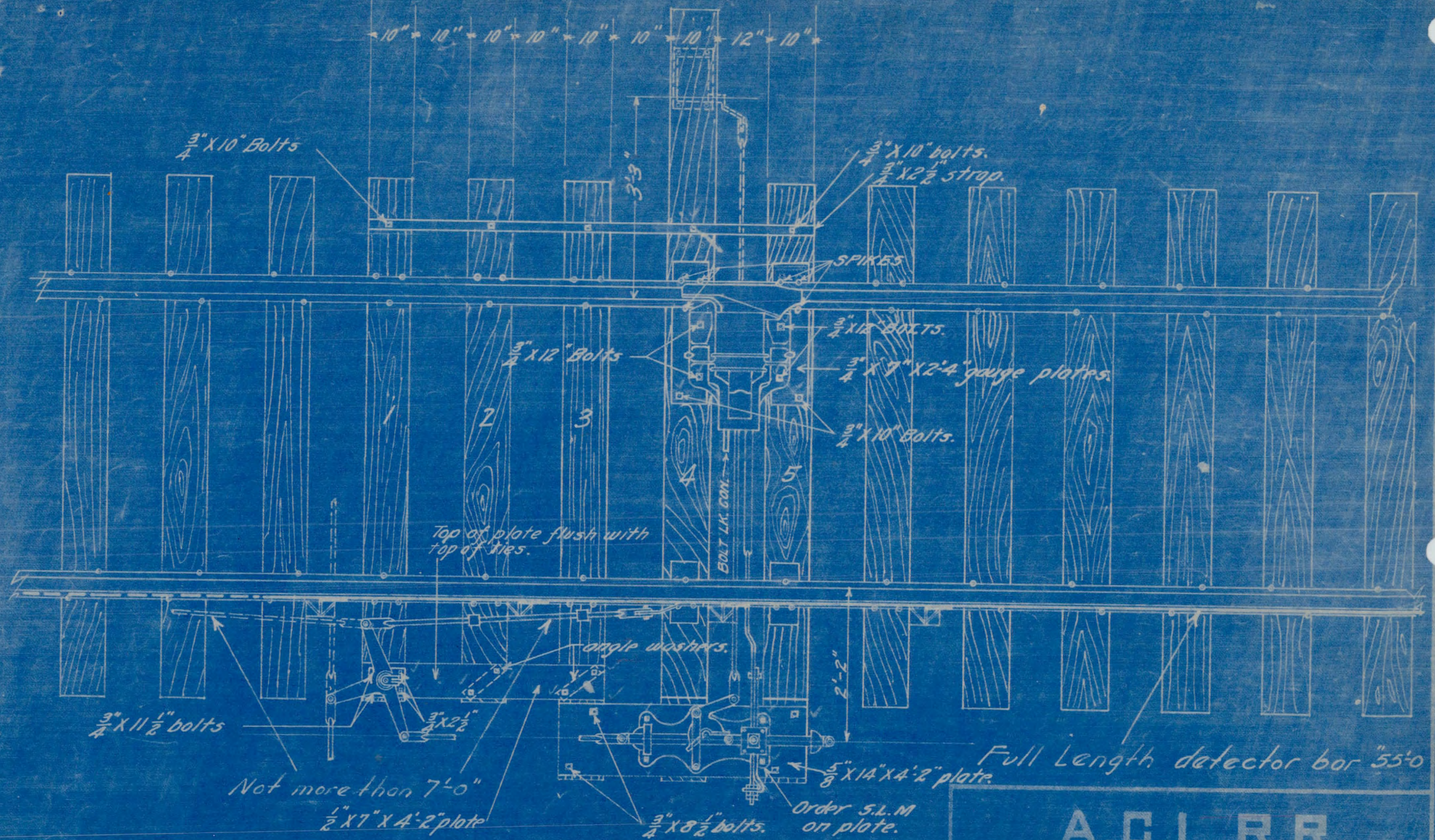
Revisions,

Drawn W.E.H.
DEC. 30, 1931

Scale:

A-52

Sheet 10 of ____ ____ Prints



All plates fastened to ties with bolts.
Tie " 3/4"X7"X3'-0"
Ties #1 and 2 are 8"X10"X8'-6"
" #3 and 5 are 8"X10"X10'-6"
Tie #4 is 8"X10"X12'-6"
Use "L" washers under bolt heads under ties
Detector bar clips to be equally spaced where practicable.

A.C.L.R.R.

Hayes Derail Layout.

S.L.M. Connected

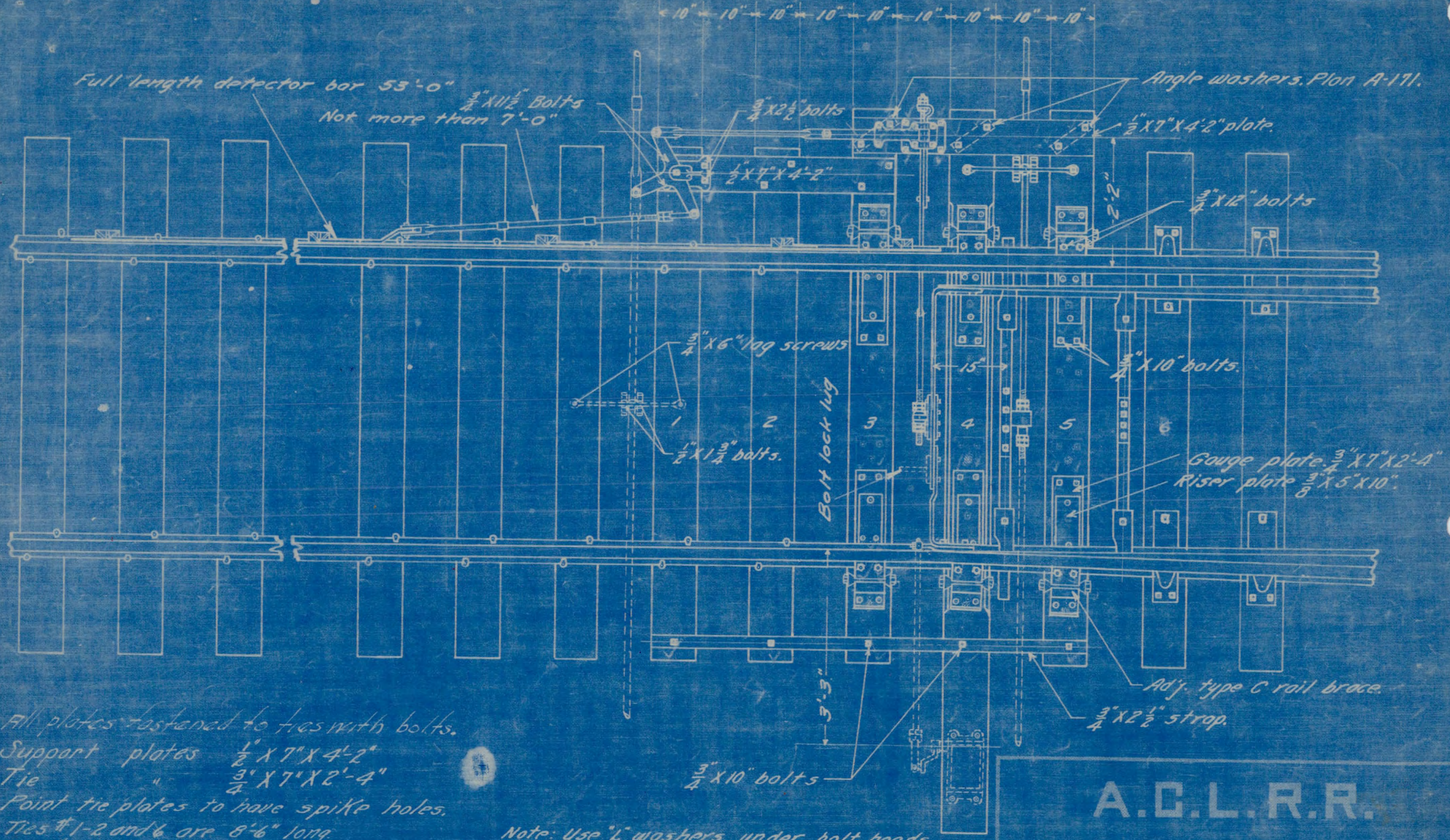
Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr. Supt. Signals

Scale 1/2" = 1'-0"

TIES 4 & 5 WERE SPACED 10" TOP OF CRANK SUPP. DET. FLUSH WITH TIES. 5-31-27.	ADJT. RAIL BRACES TAKEN OFF. DRILLING OF SUPPORT PLATES CHANGED. 3-18-27	NOTE ON DETECTOR BAR CLIPS ADDED. 1-31-27.	Revised 10-5-26.	Drawn Van Skoik May 13 1924	A-52
			WAS A-170 FEB. 14, 29		



All plates fastened to ties with bolts.
Support plates 1/2"X7"X4'-2"
Tie " 3/4"X7"X2'-4"
Point tie plates to have spike holes.
Ties #1-2 and 6 are 8'-6" long.
" #3 and 5 " 9'-6" "
" #4 is 12'-6 long.
3/4" nut locks for apparatus on plates.

Note: Use "L" washers under bolt heads under ties for plates. Plan A-171 & A-
Detector bar clips to be equally spaced where practicable.

	Was A-160 Feb. 14, 29.	Riser plates added on #3 tie. #3 tie rod insulated. 11-13-28	Note on detector bar clips added. 1-31-27
Revised: 10-4-26.	Spike holes in point tie plates added. 11-7-25.	Revised support & tie plates. 8-27-24	Supersedes A-49 of Mar. 16, 1909.

Scale 1/2" = 12"

A.C.L.R.R.

Mechanical single switch layout.
One detector bar.

Signal Engrs Office Wilmington N.C.
Approved
Correct

Chief Engr. Signal Engr.

Drawn C.H.W.
Nov. 12, 1915.

A—52

Detector bar clips to be equally spaced where practicable.

All plates fastened to ties with bolts.
Tie plates 3/4"X7"X2'4
Support " 1/2"X7"X4'-2"
Point tie plates to have spike holes.
Ties #3 and 5 are 8"X10"X9'-6"
" #6 " 7" " 8"X10"X8'-6"
" #4 is 8"X10"X12'6"
Use angle washers under bolt heads under ties for plates. See plan A-171 & A-161.
Use 3/4" nut lock for appas. on plates.

A-161

WAS A-161. FEB. 14, 29.	RISER PLATES ADDED ON #3 TIE. #3 TIE ROD INSULATED. 11-13-28.
NOTE ON DETECTOR BAR CLIPS ADDED. 1-31-27.	REVISED. 10-6-26

Spike holes in point tie plates added. 11-7-25

Revised tie & support plates 8-27-24

Scale. 1/2" = 12"

A.C.L.R.R.

Mechanical single switch layout.
Two detector bars.

Signal Engrs. Office, Wilmington N.C.

Approved Chief Engr. Correct Signal Engr.

Drawn C.W.H. Nov. 16, 1915.

A—52

Detector bar clips to be equally spaced where practicable.

All plates fastened to ties with bolts.
Tie plates 3/4"X7"X2'-4
Support " 1/2"X7"X4'-2"
Point tie plates to have spike holes.
Ties #3 and 5 are 8"X10"X9'-6"
" #6 " 7 " 8"X10"X8'-6"
" #4 is 8"X10"X12'-6"
Use angle washers under bolt heads under ties for plates. See plan A-171.
Use 3/4" nut lock for appas. angle bars.

A-161

WAS A-161. FEB. 14, 29.	RISER PLATES ADDED ON #3 TIE. #3 TIE ROD INSULATED. 11-13-28.
NOTE ON DETECTOR BAR CLIPS ADDED. 1-31-27.	REVISED. 10-6-26.

Spike holes in point tie plates added. 11-7-25	Revised tie & support plates 8-27-24

Scale. 1/2" = 12"

A.C.L.R.R.

Mechanical single switch layout.
Two detector bars.

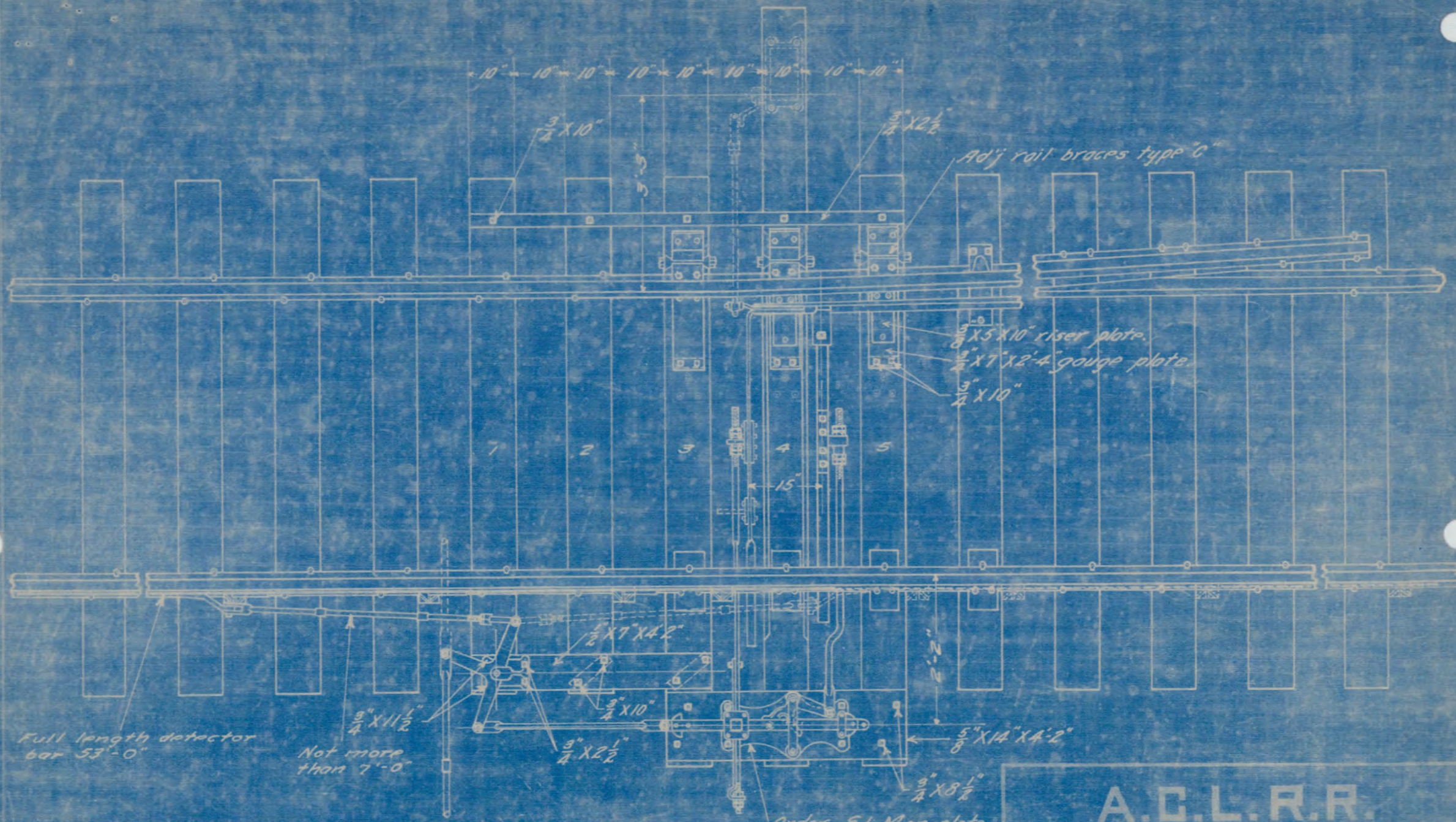
Signal Engrs. Office. Wilmington N.C.

Approved _____ Chief Engr.

Correct _____ Signal Engr.

Drawn C.W.W.
Nov. 16, 1915.

A-52



Ties #1 and 2 are 8"X10"X 8'-6"
" #3 and 5 " 8"X10"X 10'-6"
Tie #4 is 8"X10"X 12'-6"

All plates fastened to ties with bolts.
Tie " 3/4"X7"X 2'-4"
Point tie plates to have spike holes.

Use "L" washers under bolt heads under ties for plates. Plan A-171 & A-
Use 3/4" nut locks for apparatus on plates.
Detector bar clips to be equally spaced where practicable.

WAS A-169 FEB. 14, 29.

NOTE ON DETECTOR BAR CLIPS ADDED. 1-31-29

A.C.L.R.R.

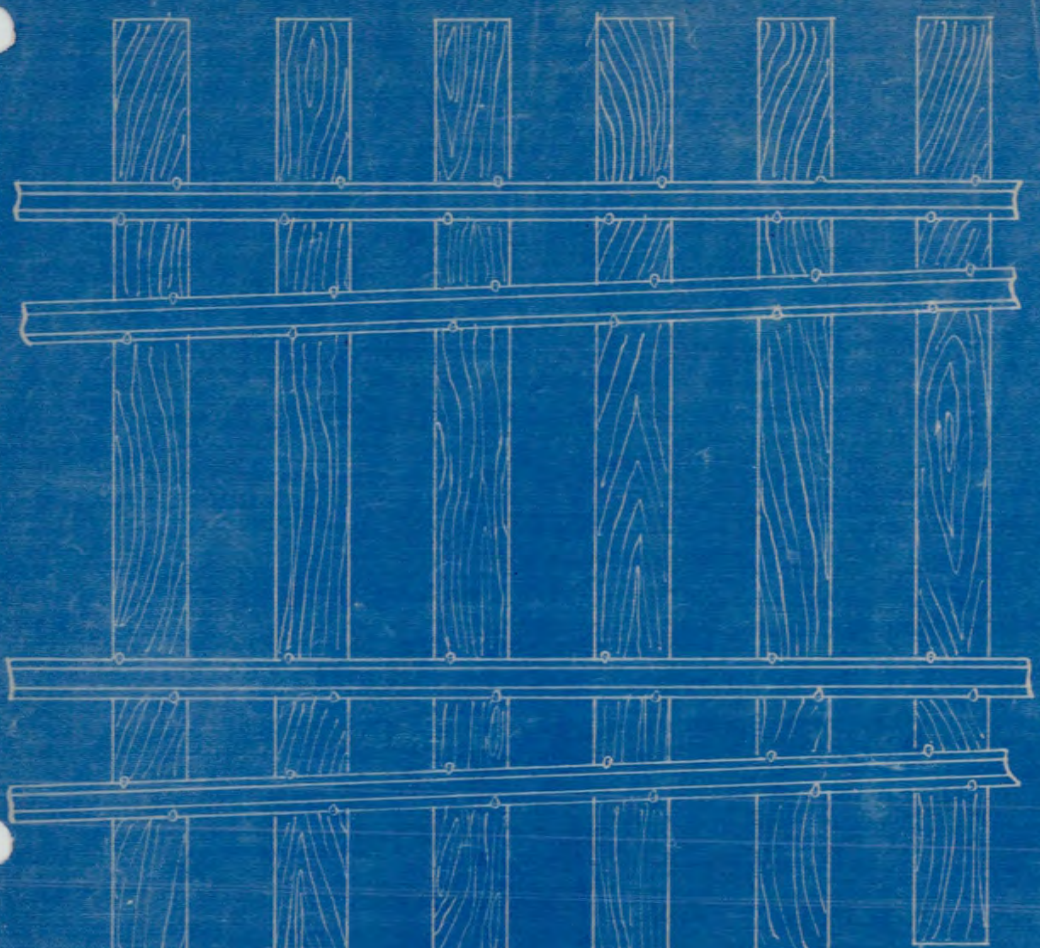
Mechanical point derail layout.
S.L.M. connected.

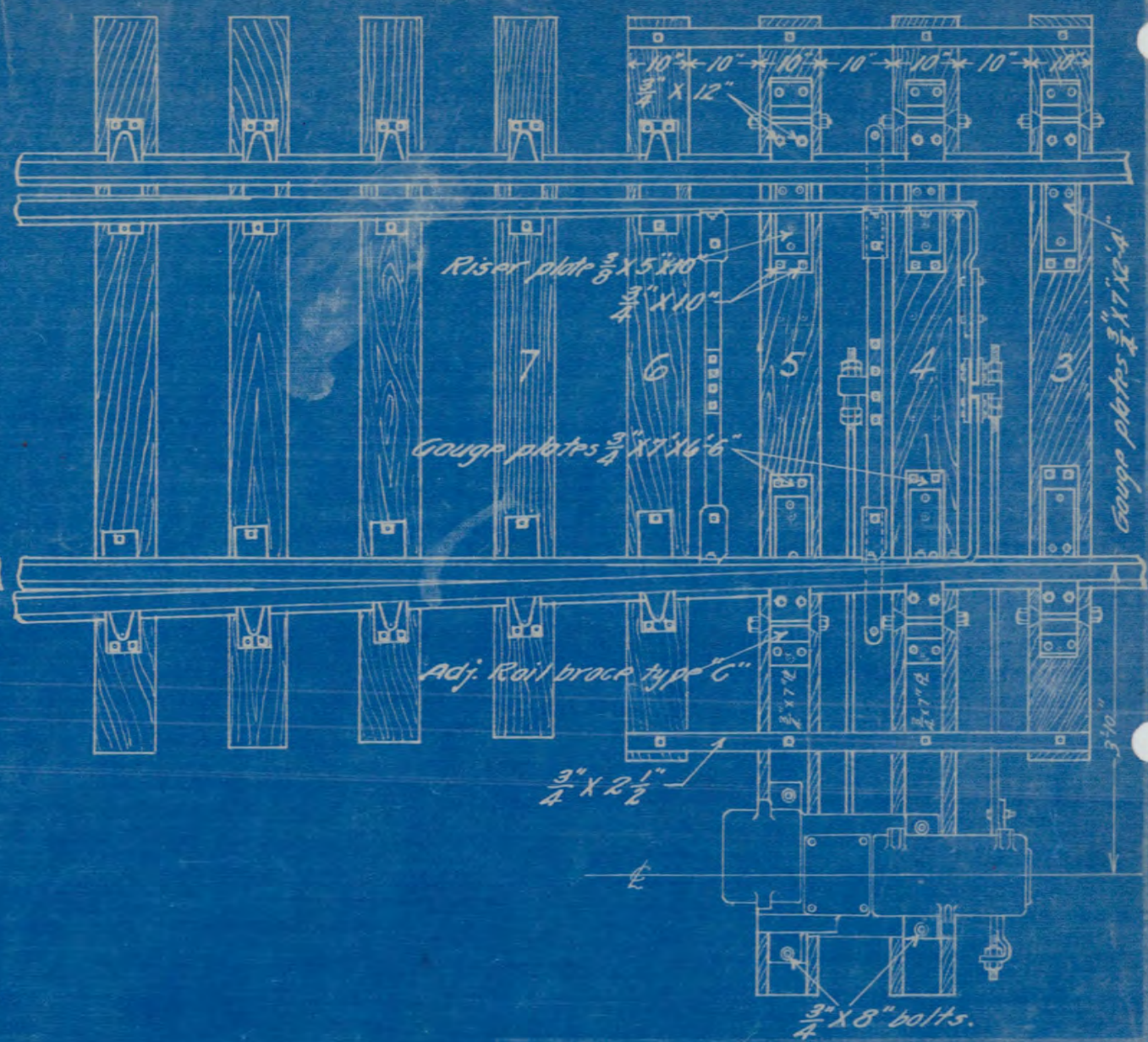
Signal Engrs. Office, Wilmington, N.C.

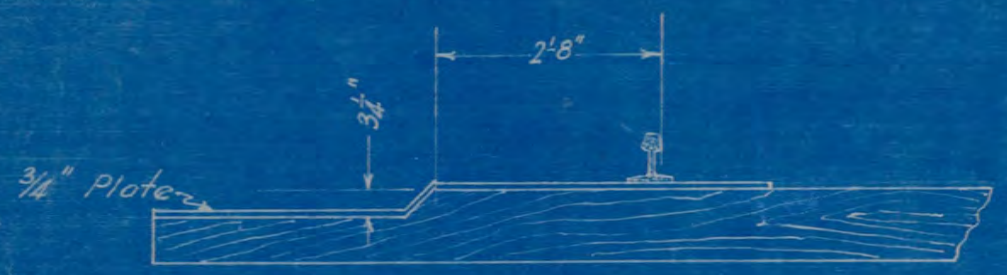
Approved _____ Correct _____
Chief Engr. Signal Engr.

Scale 1/2" = 12"

Revised: 10-6-26	Spike holes in point tie plates added 11-7-25.	Revised tie & support plates 6/17/26	Supersedes A-47 of Mar. 11, 1909.	Drawn C.E.W. Dec. 9, 1915.		A-52







Ties #4 and #5 cut as shown to assemble machine.
Tie plates 3/4" X 7" X 2'-4"
Movement plates 3/4" X 7" X 6'-6"
Tie Straps 3/4" X 2 1/2"
Point tie plates to have spike holes.
All plates fastened to ties with bolts.

Ties #3-6 and 7 are 8" X 10" X 8'-6"
" #4 and 5 are 8" X 10" X 12'-6"

Use 'L' washers under bolt heads under ties for plates. Plan A-1711 & A-
Use 3/4" nut locks for aparatus on plates.

A.C.L.R.R.

Single switch with Low Voltage Switch Machine Style "M" or "M2" Movm't.

Signal Engrs. Office. Wilmington, N.C.

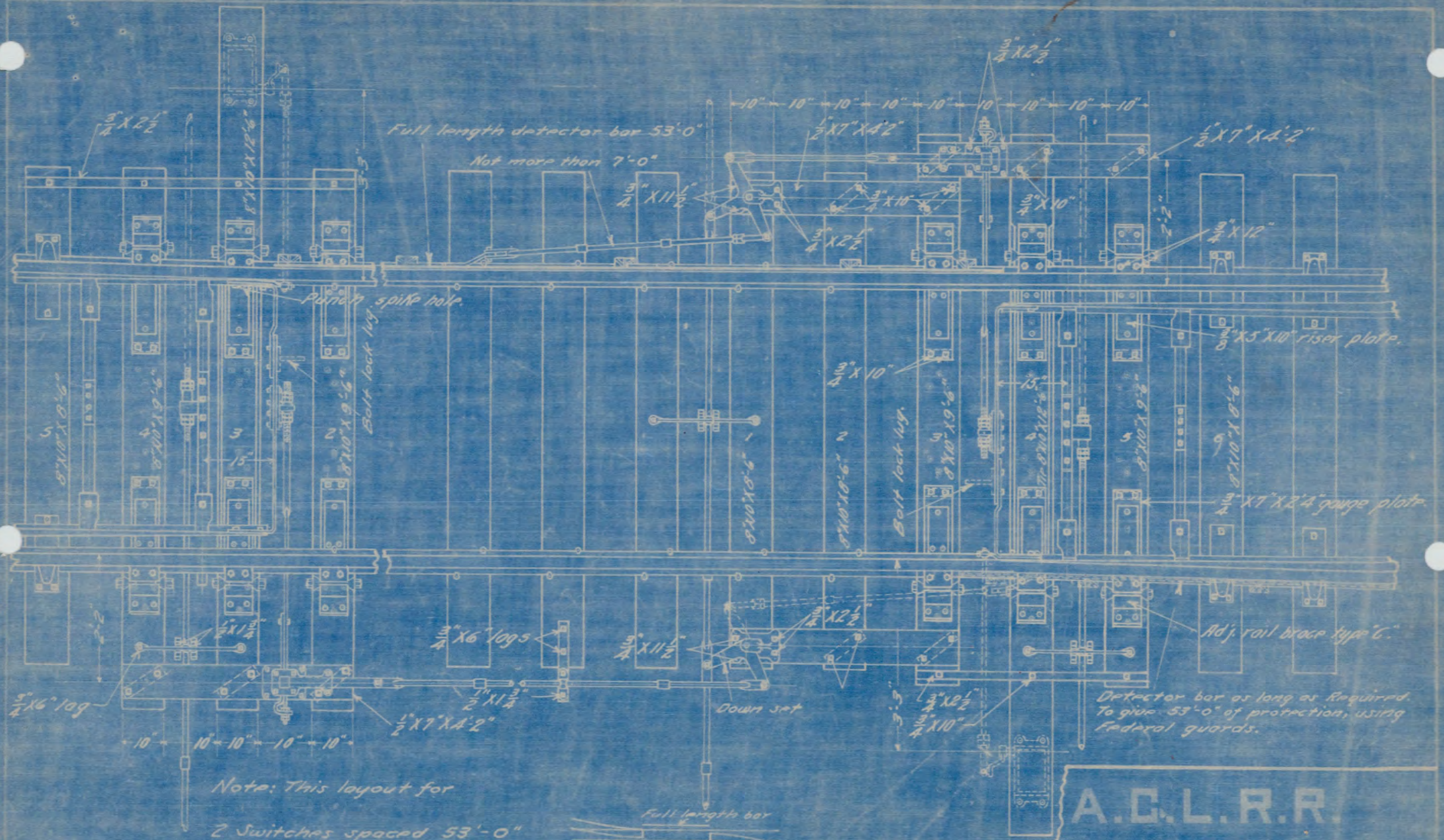
Approved

Chief Engr. Supt. Signals.

Scale: 1/2" = 1'-0"	RISER PLATES ADDED ON #3 TIE. #3 TIE ROD INSULATED. 11-13-28	Revised: 10-6-26	Spike holes in point tie plates added. 11-7-25.	Revised tie & support plates. 8-27-24	Drawn July 10, 1924	A-52

WAS A-163 FEB. 14, 29.

SHEET 5


3/4"X2 1/2"
Full length detector bar 53'-0"
Not more than 7'-0"
1/2"X7"X4'2"
3/4"X11 1/2"
3/4"X10"
3/4"X12"
Punch spike hole.
Bolt lock lug.
3/8"X5"X10" riser plate.
15"
3/4"X7"X2'4" gauge plate.
Adj. rail brace type "C"
3/4"X6" lags
1/2"X1 3/4"
1"X7"X4'2"
Down set
Detector bar as long as Required. To give 53'-0" of protection, using Federal guards.
10"
Note: This layout for
2 Switches spaced 53'-0"
2 Sws. spaced 9'-6" to 50'-0"
Full length bar
Var. length bars
All plates fastened to ties with bolts.
Support plates 1/2"X7"X4'-2"
Tie " 3/4"X7"X2'-4"
Note, additional detector bar and connections shown dotted.
Point tie plates to have spike holes.
Use angle washers under bolt heads under ties For plates Plan A-171-A
Use 3/4" nut locks under nuts for apparatus on plates.
Detector bar clips to be equally spaced where practicable.

1/2"=12"	RISER PLATES ADDED ON #2 & 3 TIES AND #3 TIE RODS INSULATED. 11-13-28.	Note on detector bar clips added. 1-31-27.	Revised: 10-6-26	Spike holes in point tie plates added. 11-1-25.	Revised tie & support plates. 8-27-24 WAS A-162 FEB 14 29	Drawn C.W. Oct. 30, 1915.

A.C.L.R.R.

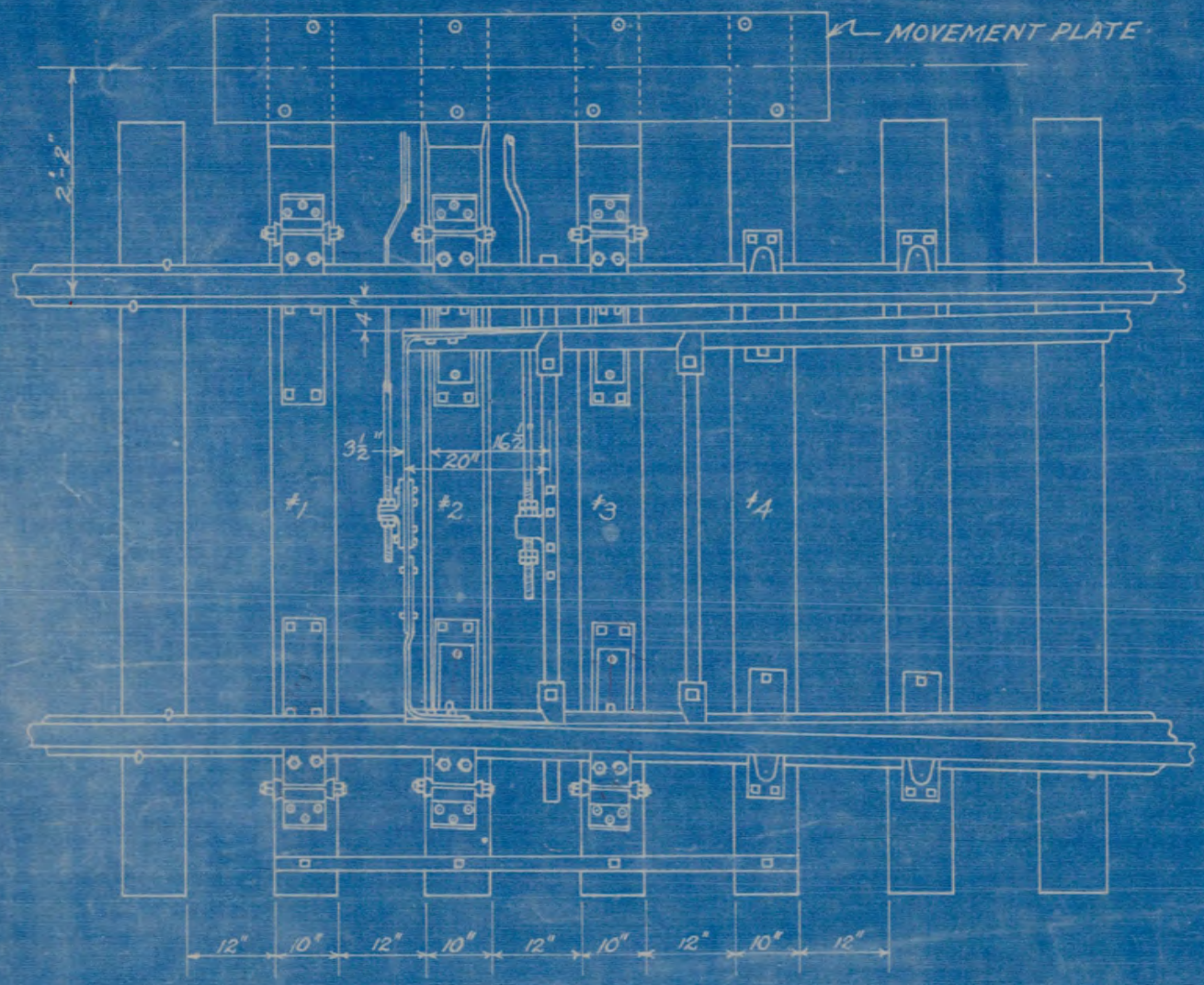
Mechanical Switch Layout for 2 Single Switches.

Signal Engrs. Office, Wilmington, N.C.

Approved Correct

Chief Engr. Signal Engr.

A—52



SWITCH TO HAVE 4" STROKE, WITH ¾" OVERSTROKE.

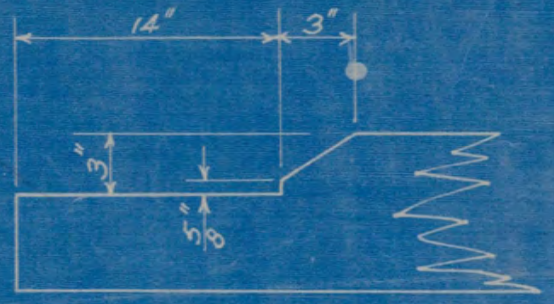
ALL PLATES BOLTED

TIE PLATES ¾" X 7" X 2'-4"

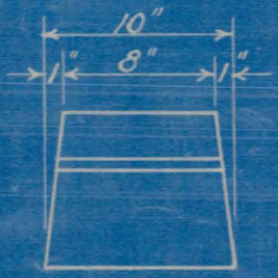
POINT TIE PLATES TO HAVE SPIKE HOLES.

Scale - ½" = 12"

TIES #1, 2, 3 & 4 TO BE 8" X 10" X 9'-9"; PLACED AND FITTED, THEN FRAMED AS SHOWN:



TIE #2 IN ADDITION TO THE ABOVE, TO BE BEVELLED LIKE THIS:



SEE A-88 FOR VALVE FOUND.

A.C.L.R.R.

E-P. SWITCH LAYOUT

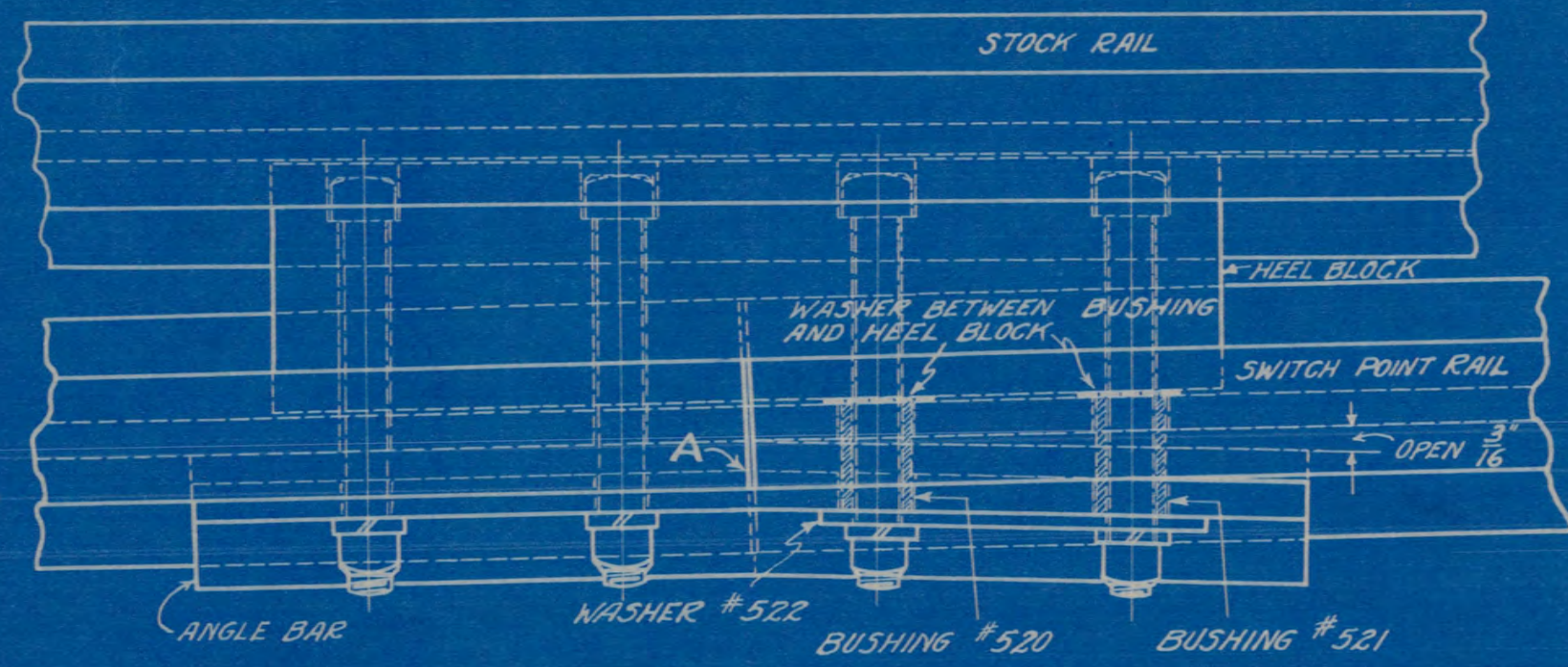
Signal Engrs. Office, Wilmington, N.C.

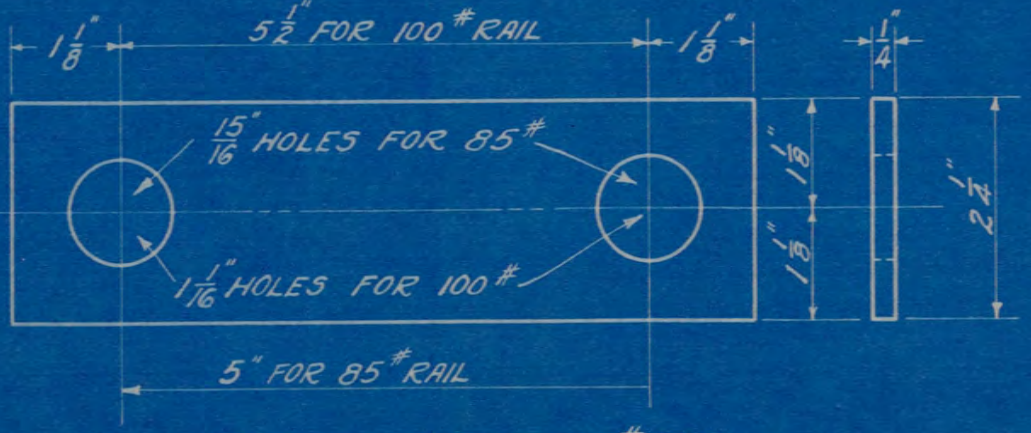
Approved Chief Engr. Correct G. Hillsonney Signal Engr.

WAS A-1207 FEB. 14, 27	Drawn E.J.S. APR. 8, 1926.		A-52

SHEET 7

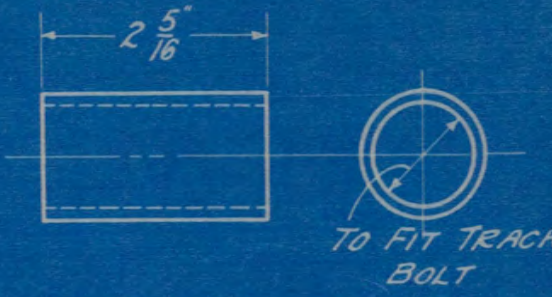
NOTE:
ANGLE BAR MUST BE BENT, IN CENTER, AT "A"
TO GIVE SPREAD OF $\frac{3}{16}$" AT END.
BUSHINGS MUST BE OF PROPER LENGTH TO PREVENT ANGLE BAR FROM BINDING HEEL OF SWITCH, WHEN TRACK BOLTS ARE TIGHTENED.
INTERLOCKED SWITCHES MUST BE FITTED WITH BUSHINGS.
HOLES IN ANGLE BAR AND HEEL OF SWITCH TO CLEAR BUSHINGS $\frac{1}{32}$"



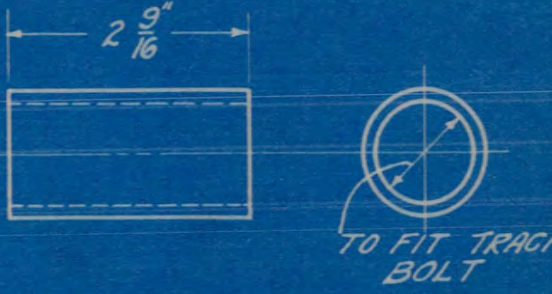


STRAP WASHER #522

BUSHINGS CUT OUT OF 1" PIPE



STEEL BUSHING #520



STEEL BUSHING #521

85# TRACK BOLTS 7/8"
100# " " 1"

A. C. L. R. R.

BUSHINGS
FOR HEEL BLOCKS

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

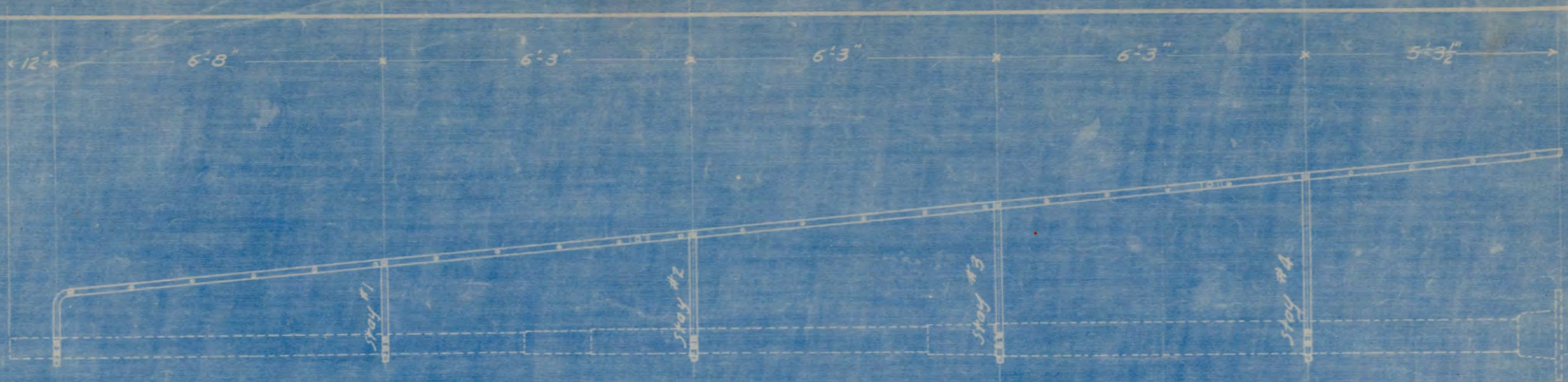
Chief Eng'r. Supt. of Signals.

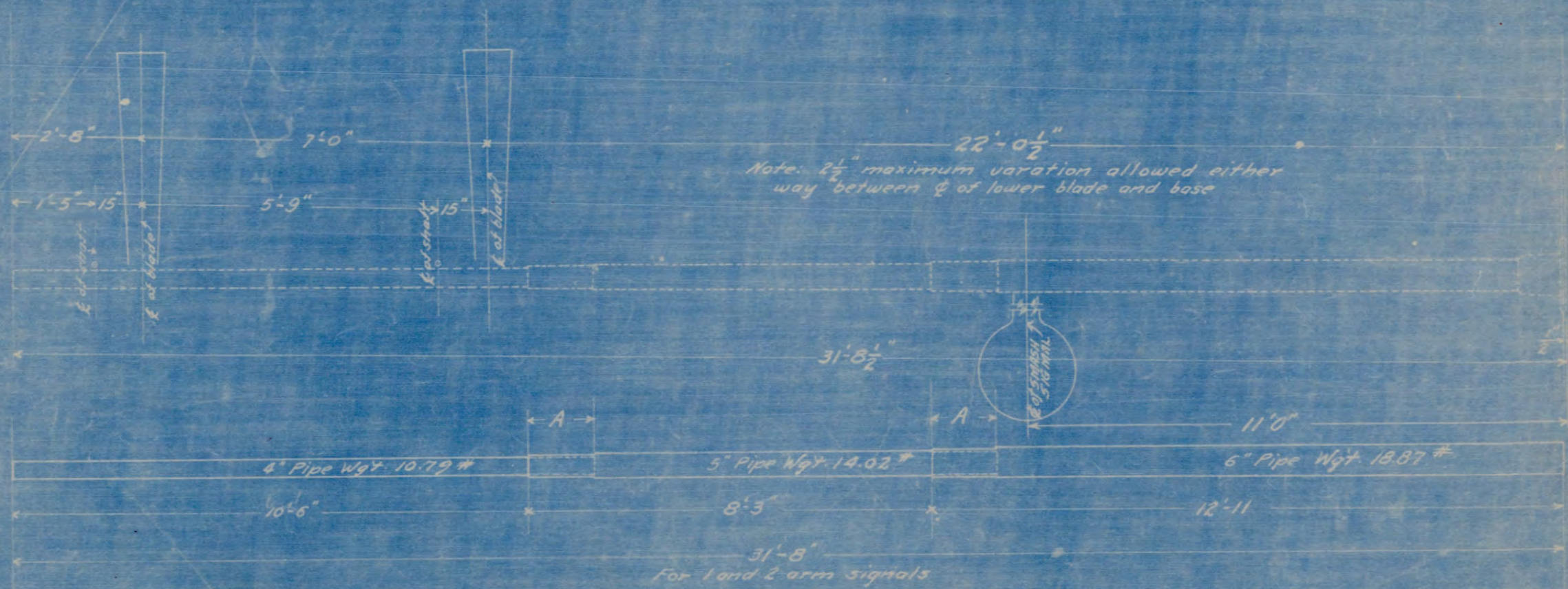
Revisions.

SUPERSEDES A-52 OF NOV. 5, 1929.

Drawn C.A.S.
JAN. 11, 1930

A-52





Note:
Swage Joint "A" = 16"
Pressed " " = 10"

Scale: ⅜" = 12"

Revisions

℄ of Stanchion added 3-12-26	Distance from top of to ℄ of Shaft changed 8-22-11	Supersedes A-10 of Apr 12-10, & A-12 " " "

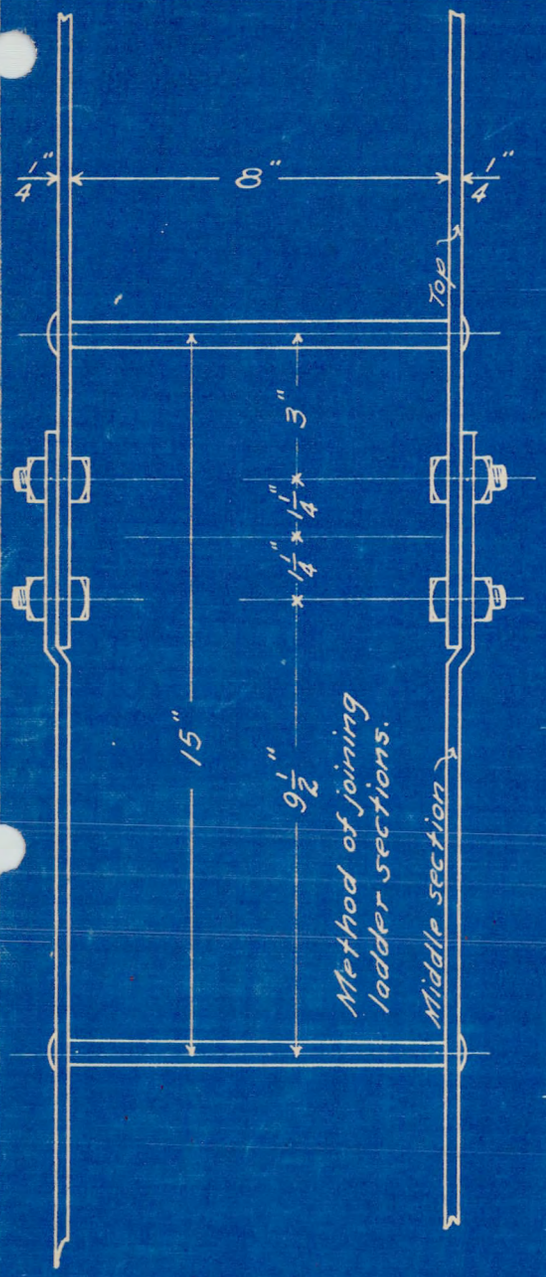
Std. sig. pole for 1 and 2 arm signals,
" locations of sig. blades on sig. poles &
" sig. pole ladder comp. and location.

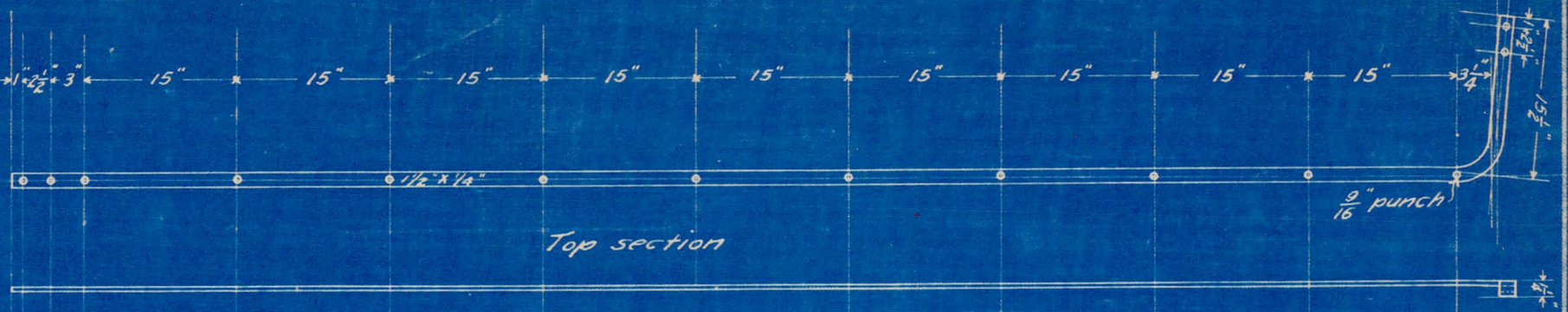
Approved Correct

Chief Engr. Sig. Engr.

Drawn Cau. Oct. 25, 1910.		A—61

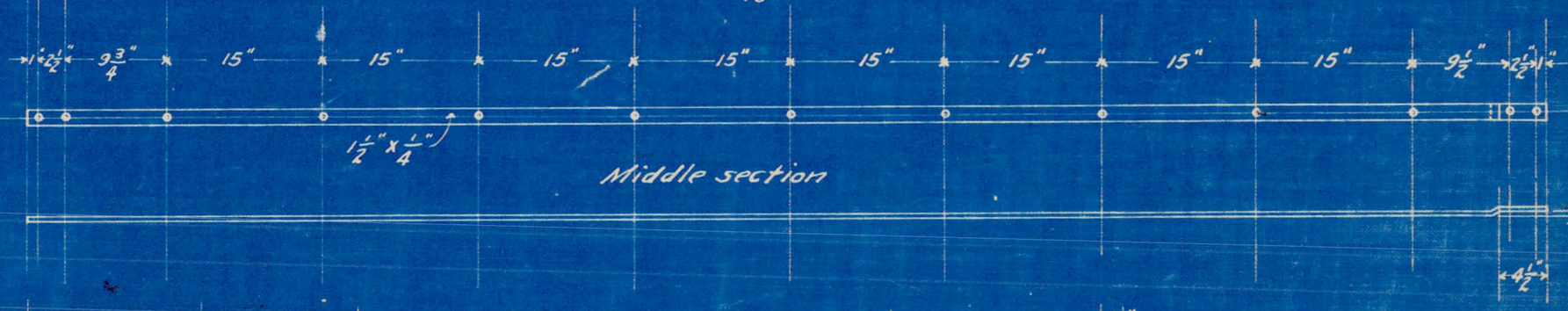
Sheet 1 of 3



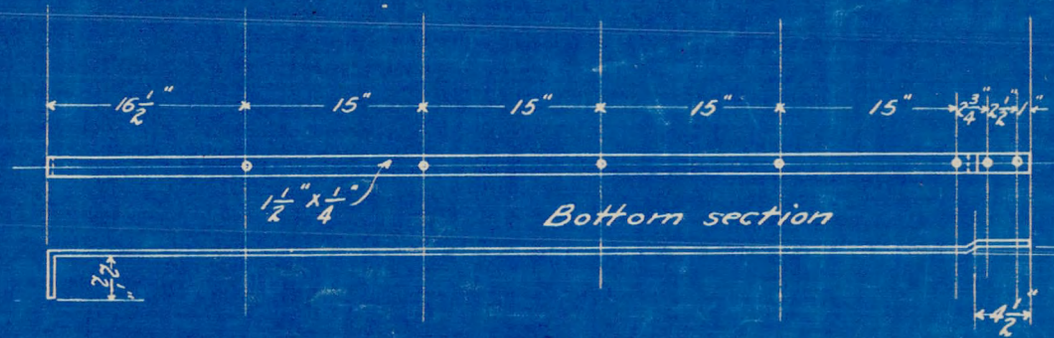


Top section

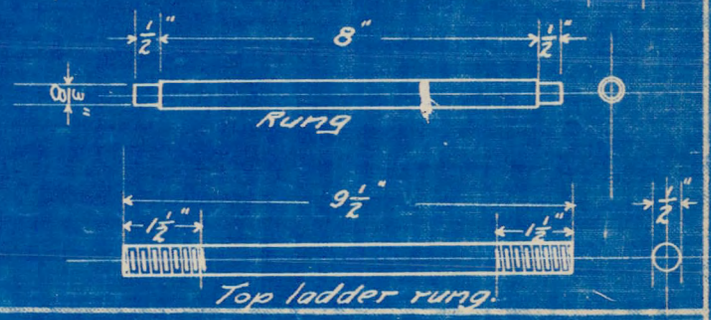
All ladder rung holes 7/16" punch except for top rung.
All connection holes 9/16" "



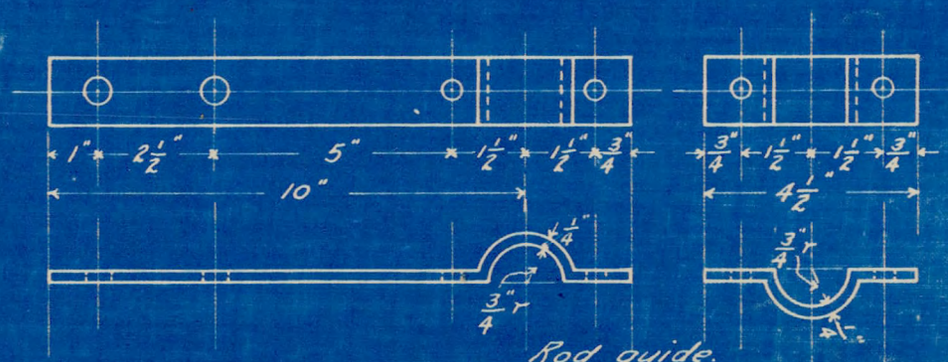
Middle section



Bottom section



Top ladder rung.



Rod guide.
See A-61

Stay No.	"A" will be
1	22 3/4" long
2	28 3/4" long
3	34 3/4" long
4	40 3/4" long
For train order:	Each stay 13 1/2"

Revisions.

A.C.L.R.R.

Std. signal pole ladder details.

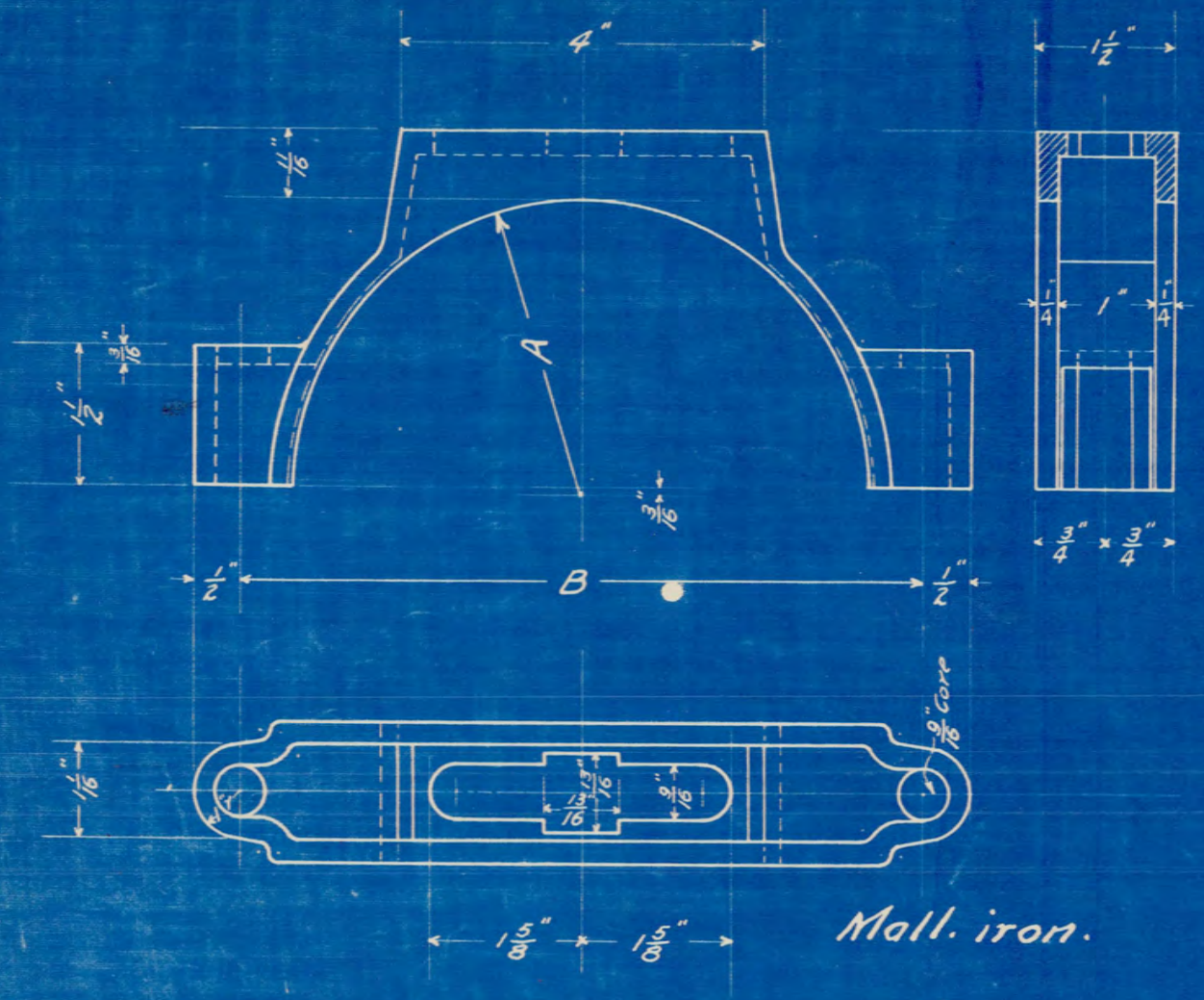
Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr Signal Engr

Scale: 3/4" = 12"

Was A-60 Fe6.9, 1929.	Supersedes A-60 of Mar. 20, 1909.	Drawn Caw. Oct. 24, 1910.		A-61



Mall. iron.

2 bolts req. for each clamp.

For 4" pipe	A will be	2 5/16" r	B will be 5 3/8"
" 5" "	" "	2 7/8" r	" " 6 3/8"
" 6" "	" "	3 5/16" r	" " 7 3/8"

Scale: 1/2 size.

A.C.L.R.R.

St'd. signal ladder clamps

Signal Engrs. Office Wilmington, N.C.

Approved _____ Chief Engr

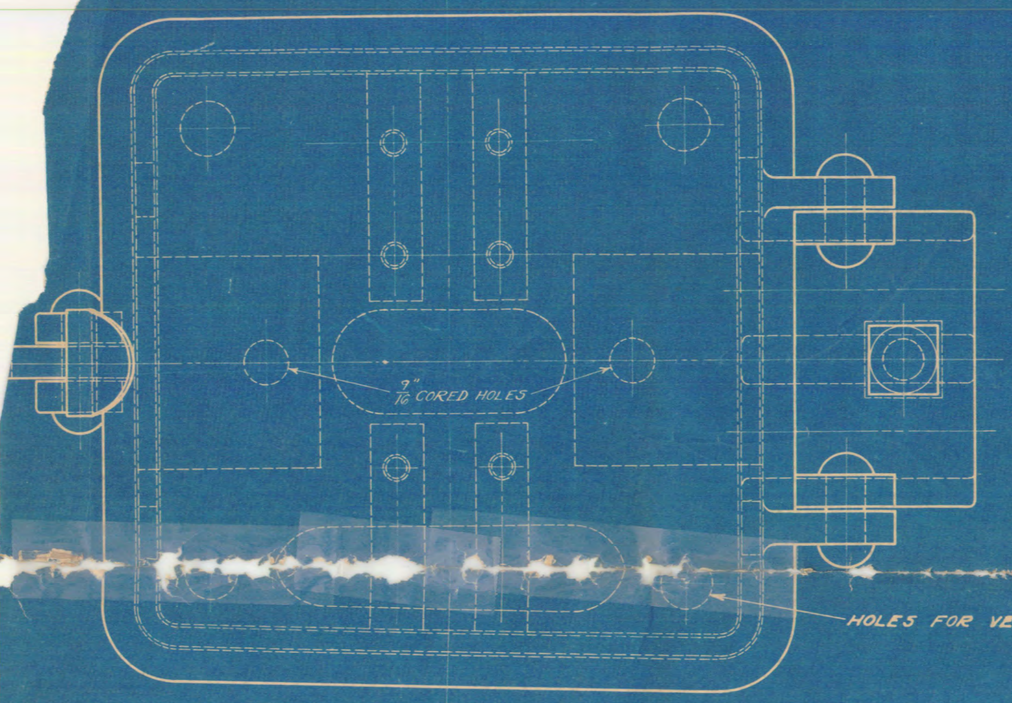
Correct H. J. Calloway Signal Engr.

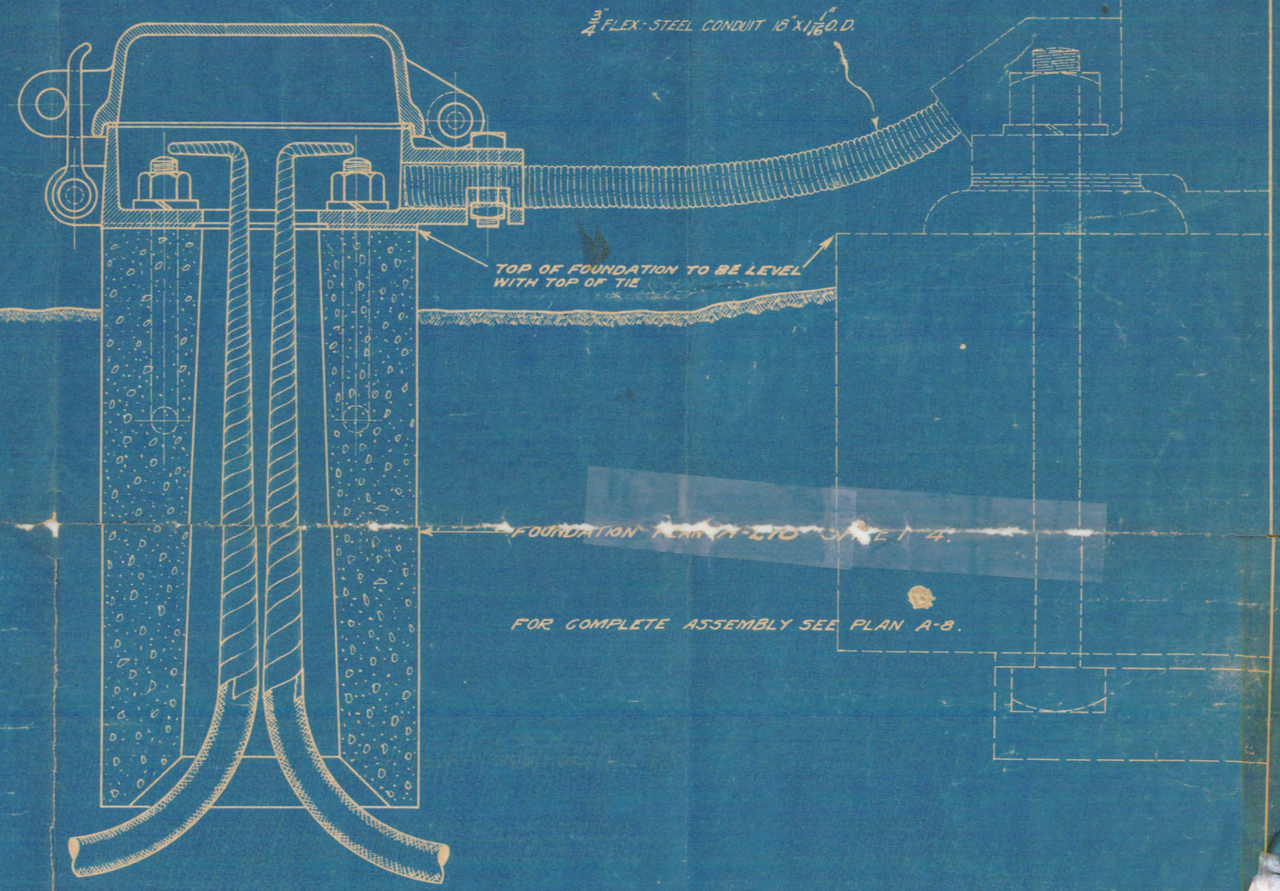
Wgs A-114
Feb. 9, 1929

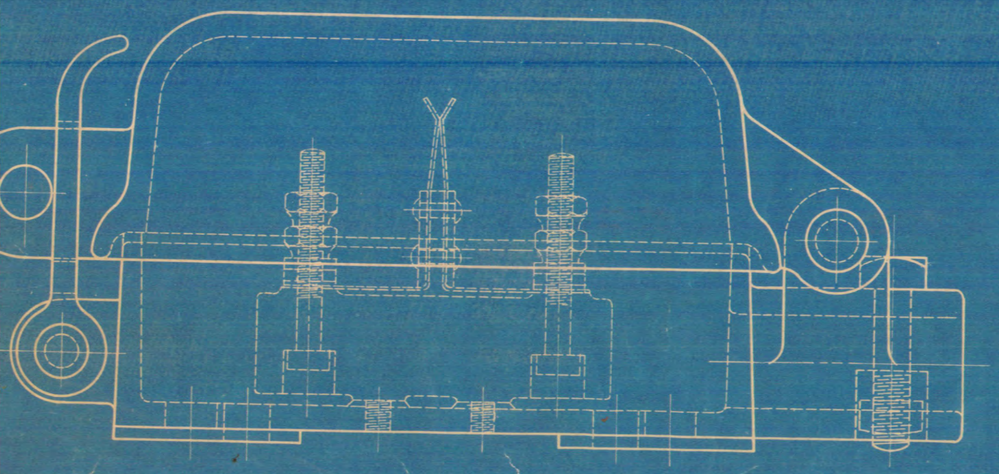
Drawn batt.
Jan. 27, 1911.

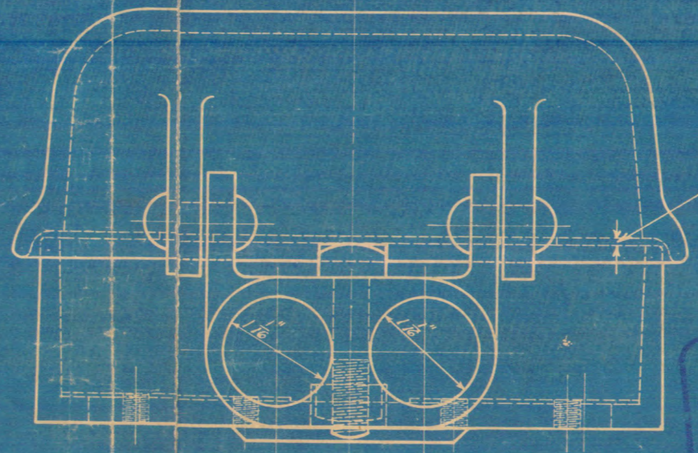
A—61

Sheet 3 of 3




INDUCTOR OR SW. CH'T. CONTROLLER BOX.
3/4" FLEX-STEEL CONDUIT 18" X 1 1/16" O.D.
TOP OF FOUNDATION TO BE LEVEL WITH TOP OF TIE
FOUNDATION
FOR COMPLETE ASSEMBLY SEE PLAN A-8.





1/16" CLEAR OPENING FOR VENTILATION.

GENERAL ENG. DEPT.
PRINT RECORD
REC'D 3-18-35 WITH
LETTER FROM R R Co.
DATED 3-13-35
BENT OUT WITH LETTER
OF TO

GENERAL ENG. DEPT.
PRINT RECORD
REC'D
LETTER FROM WITH
DATED
SENT OUT WITH LETTER
OF TO

A.C.L.R.R.
IDEAL TERMINAL BOX FOR PARKWAY CABLE

SCALE: ONE-HALF & FULL SIZE.

OFFICE SUPT. OF SIGNALS. APPROVED: WILMINGTON, N.C. CORRECT:

CHIEF ENGR. SUPT. OF SIGNALS.

AS PER T.G.S. CO's. PLAN E-29-289 OF 1-12-28.

NOTE, REF. SLEEVE ON ONE END OF CONDUIT, OFF. MAR. 12, 1935.

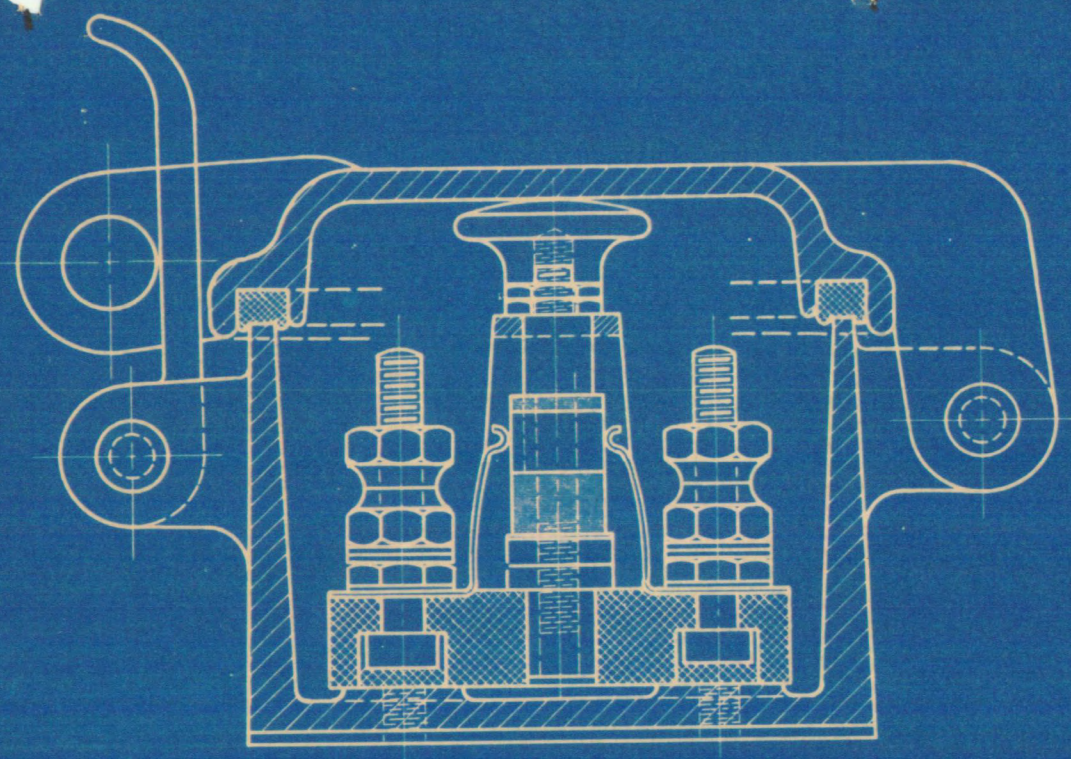
REVISED SIZE OF CONDUIT AND CONDUIT OPENING. 4-23-30

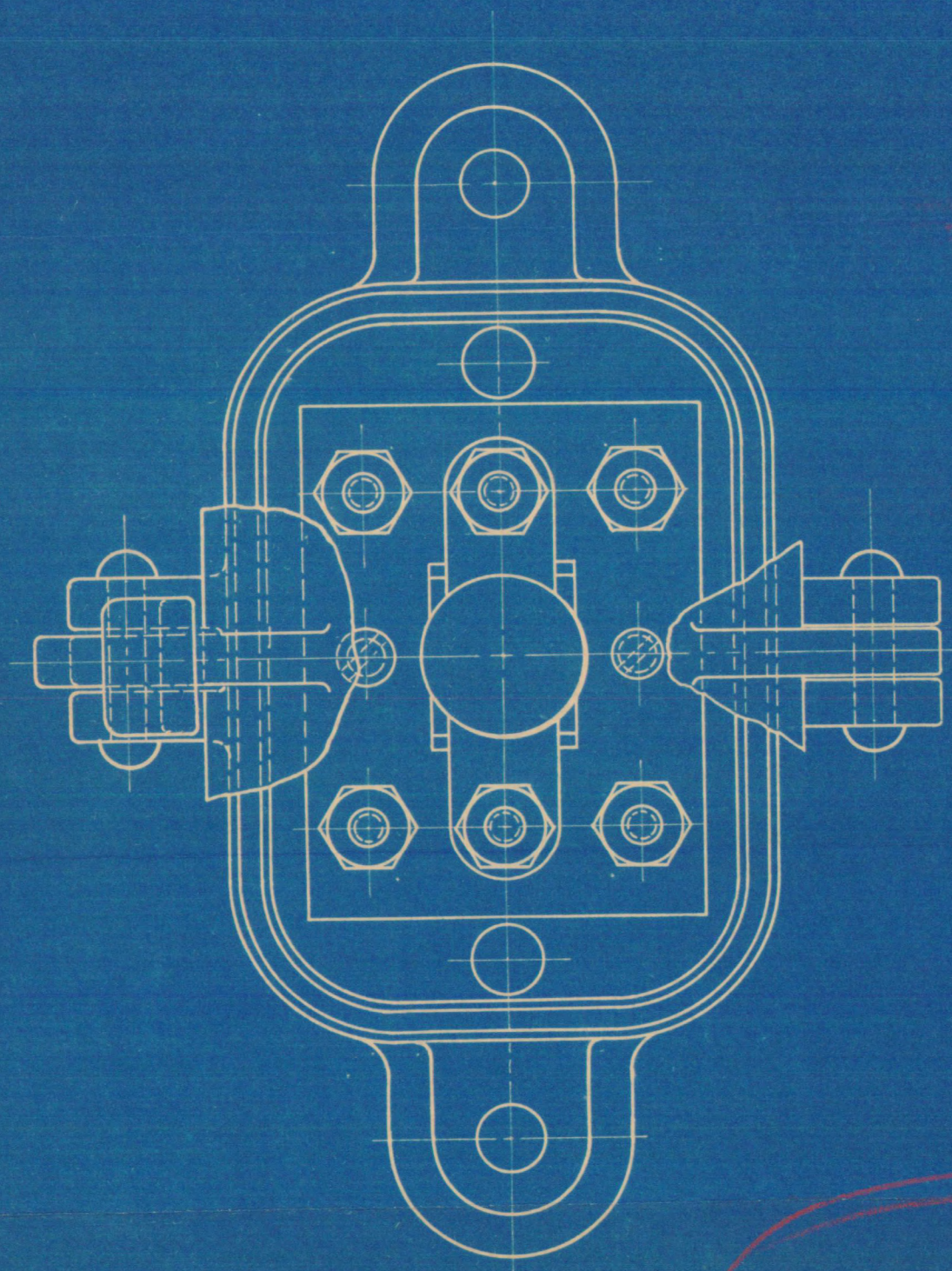
REVISED TO SHOW TOP OF FOUND. LEVEL WITH TOP OF TIE. 2-8-29.

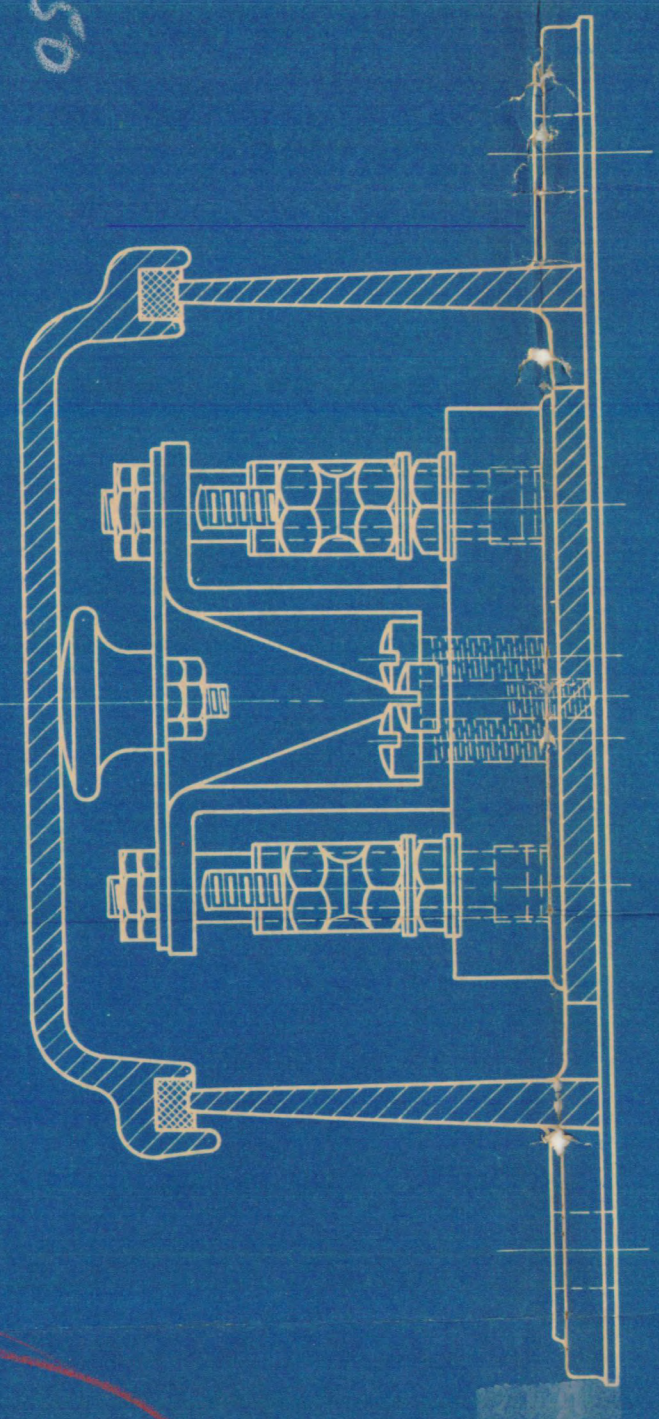
SUPERSEDES C-65 OF OCT. 17, 1927.

DRAWN: E.J.S. FEB. 14, 1928. TRACED: W.E.H.

C-65







2. Changed Assembly #11.50
4. Changed Assembly # 19.25

SINGLE UNIT TEST SWITCH
SHEET 2

GENERAL ENG. DEPT.
PRINT RECORD
REC'D 1-18-38 WRE
LETTER FROM N.Y. Office
DATED 1-17-38
SENT OUT WITH LETTER
OF ..... TO .....

C-70 SH. 2

			SUPERSEDES C-70-SH.1 OF 3-14-35 & C-70-SH.2 OF 3-25-36.	DRAWN: W.E.H. DEC. 8, 1936	SCALE:- FULL SIZE.	C-70

A. C. L. RR.

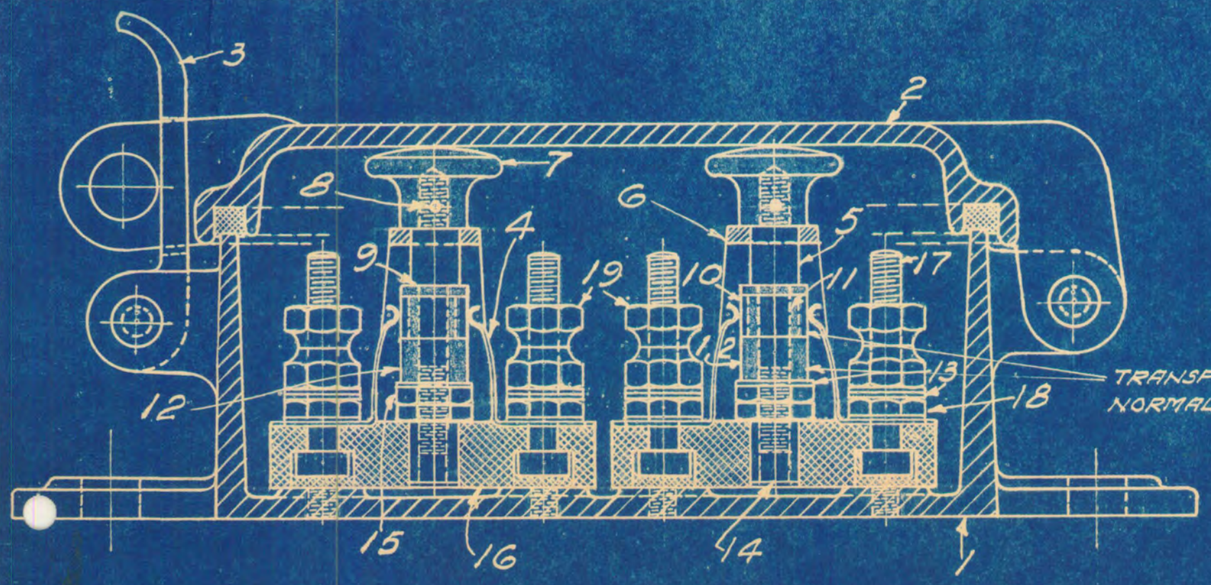
IDEAL TEST SWITCHES

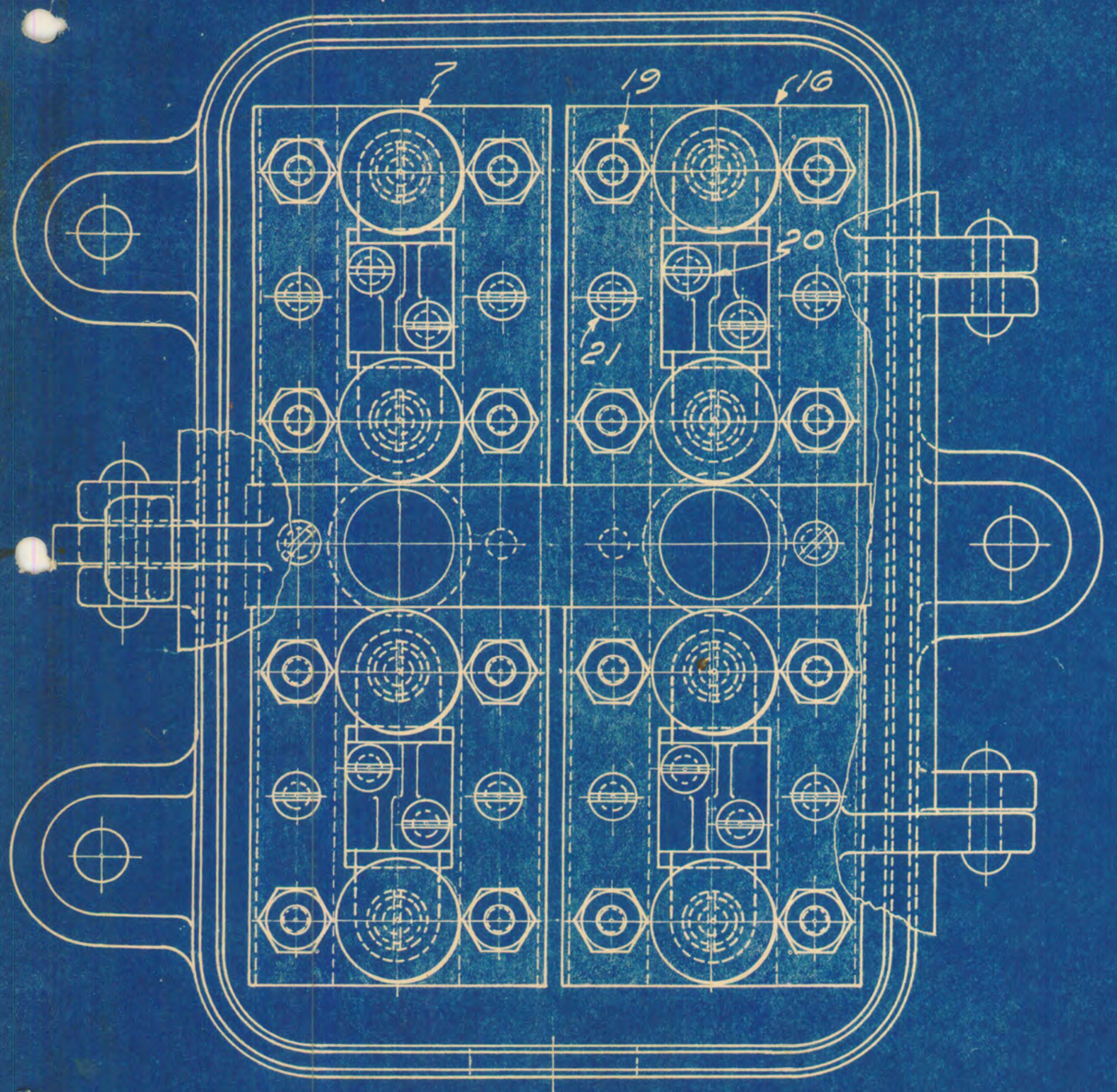
SIGNAL DEPT. APPROVED.

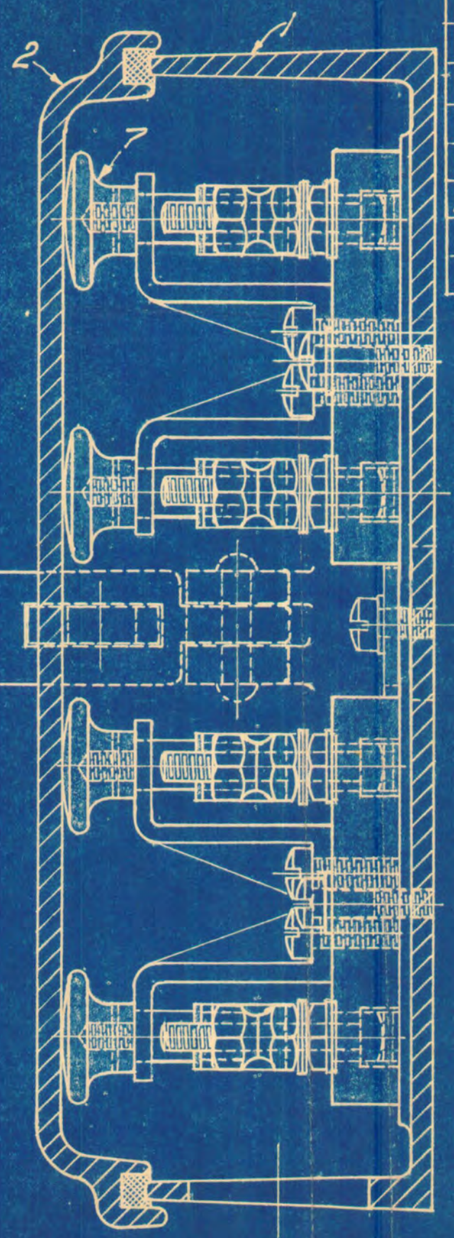
WILMINGTON, N.C. CORRECT

CHIEF ENG'R. SUPT. OF SIGNALS.

SHEET 1 & 2







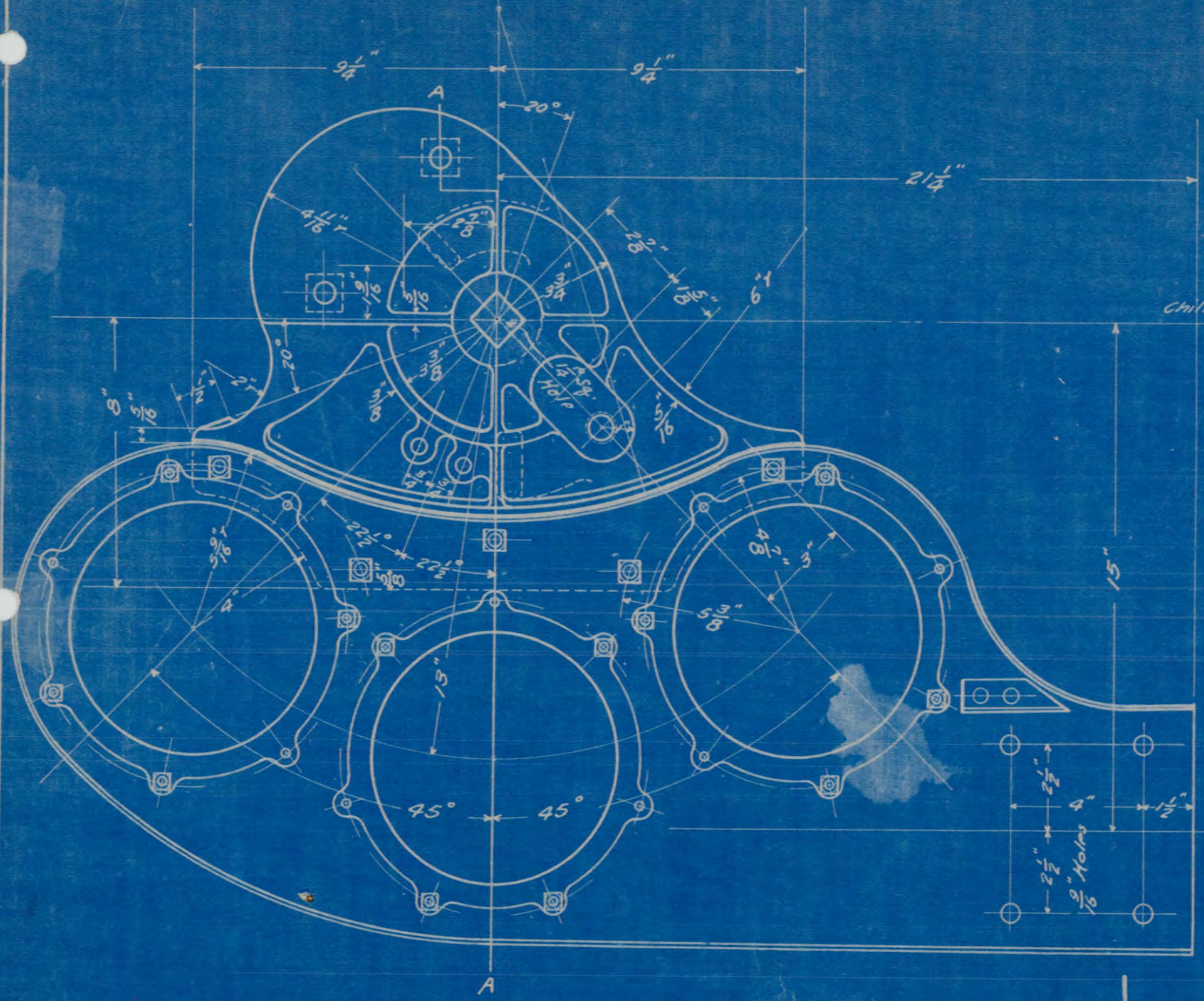
MATERIAL LIST

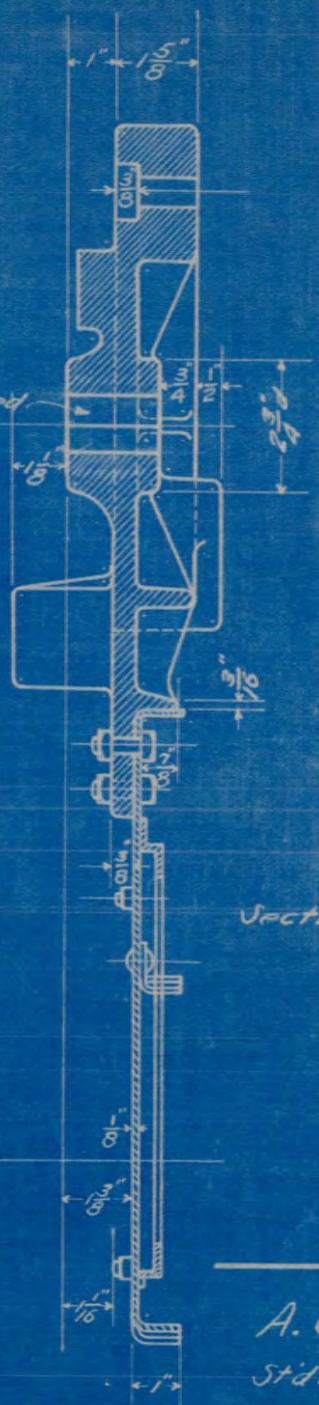
1	BOX	CAST IRON OR ALUMINUM
2	COVER	" " " "
3	HASP	MALL IRON
4	CONTACT SPRING	PHOS. BRONZE
5	PULL ROD	BRASS
6	BRACKET FOR 5	BRASS
7	KNOB FOR 5	FORMICA
8	PIN FOR 7	BRASS
9	INSULATING WASHER	FORMICA
10	CONTACT FERULE	BRASS
11	INSULATING BUSHING	FORMICA
12	INSULATING FERULE	FORMICA
13	WASHER	BRASS
14	NUT AND GUIDE	BRASS
15	NUT FOR 5	BRASS
16	INSULATING BLOCK	FORMICA
17	TERMINAL POST	BRASS
18	NUT FOR 17	BRASS
19	BINDING NUTS	BRASS
20	SCREW FOR 6	BRASS
21	SCREW FOR 16	BRASS

T. GEO. STILES CO.,
DESIGNERS AND MANUFACTURERS
ARLINGTON, N.J.

IDEAL TEST SWITCH

DRAWN TRACED CHECKED	APPROVED DATE 3-14-35
SCALE FULL SIZE	E-29-329





Section A - A

A.C.L. RR.

Std. upper quadrant blade grip for Style "S" sigs.

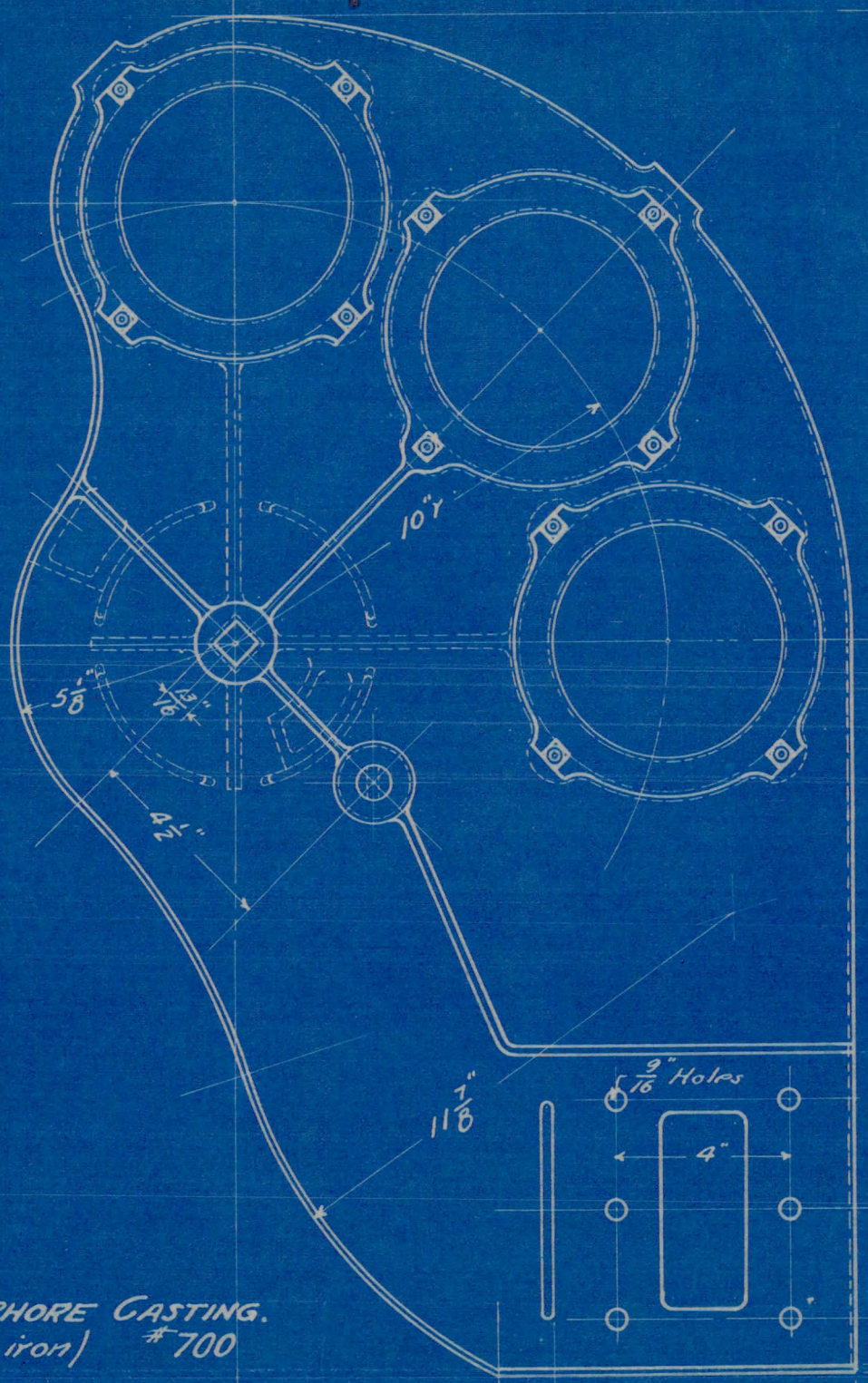
Signal Eng'rs. Office: Wilmington, N.C.

Approved Correct

Chief Engr. Signal Eng'r.

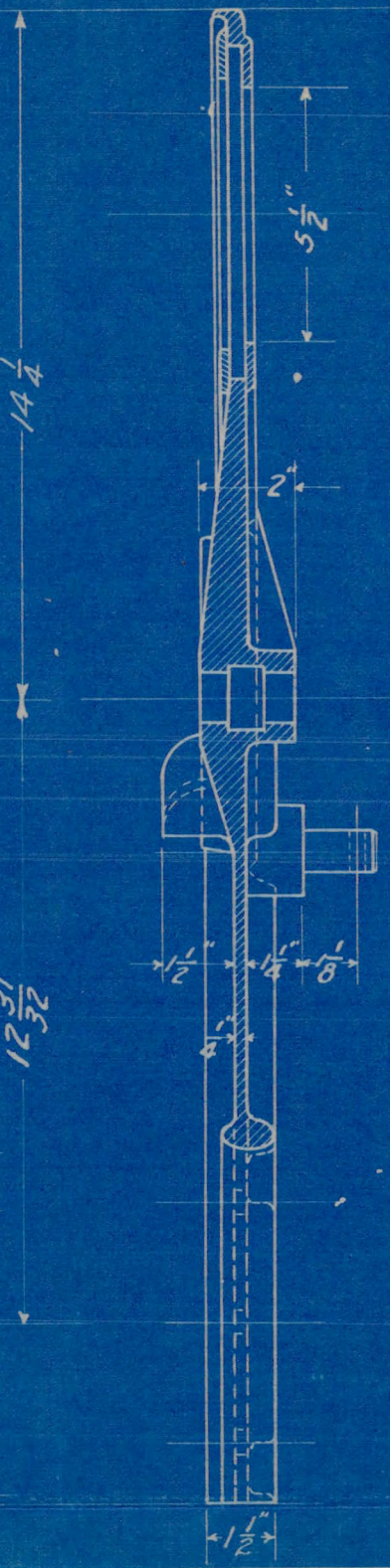
Spindle Hole shown as 1¼" Sq. June 14, 29.	Superseds A-71 of 1-27-1911.	Drawn A.K.W. Nov. 9. 1914.		A-71

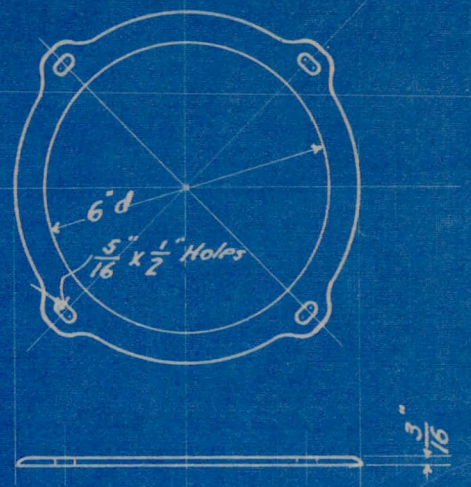
SCALE 3" = 12"



SEMAPHORE CASTING.
(Moll. iron) #700

Scale 3" = 12"





ROUNDEL RING.
#701

A.C.L.R.R.

Std. upper quadrant Blade Grip for Train Order Signal.

Signal Engrs. Office Wilmington, N.C.

Approved Correct

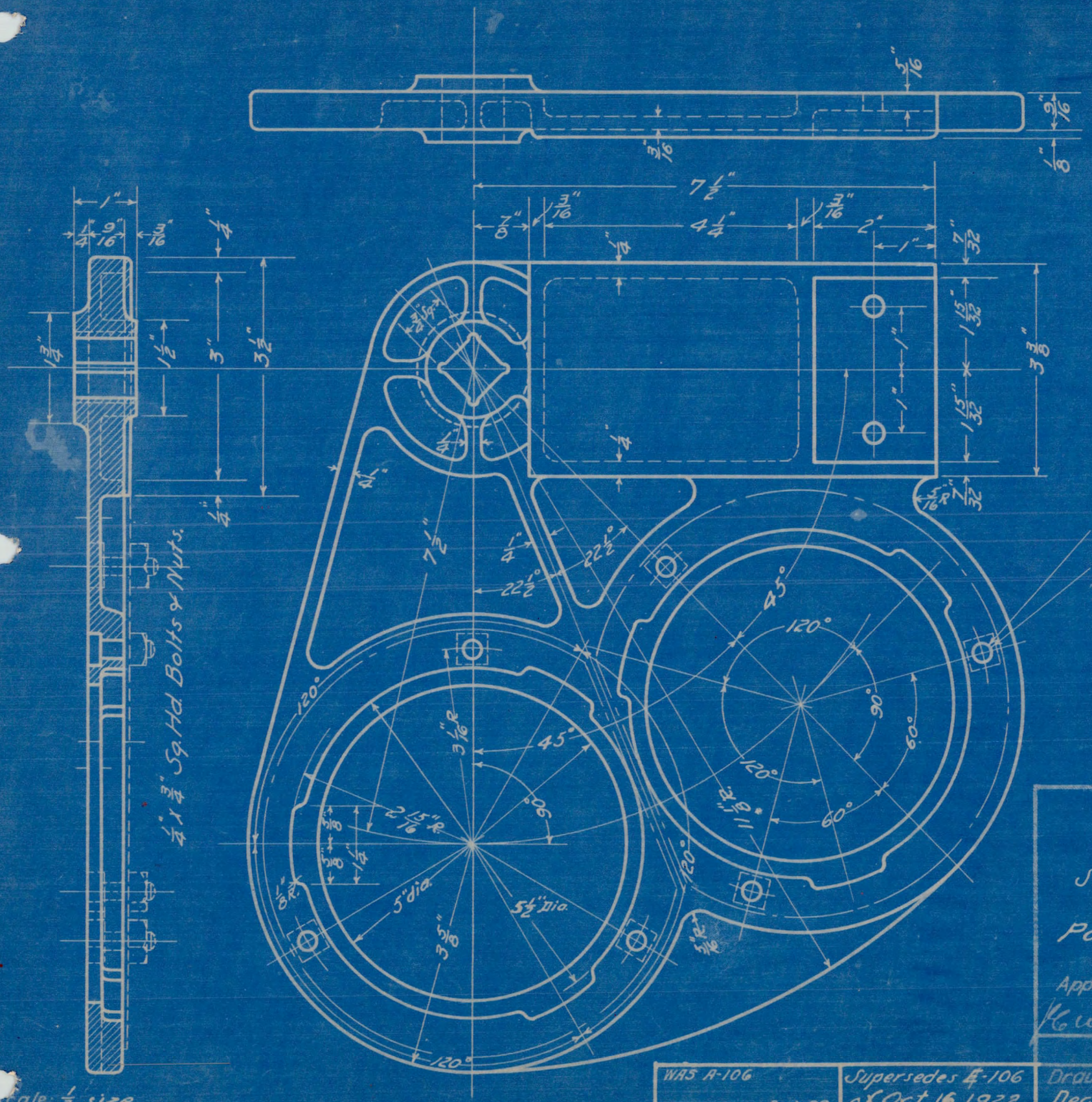
Chief Engr. Supt. of Signals.

Drawn Nov. 10, 1921.

WAS A-70 2-1-29

Supersedes F-60 of Oct. 22, 1910.

A — 71



5/16" holes.

Cored holes
½" x ½" x ¼" deep.

Section A-B.

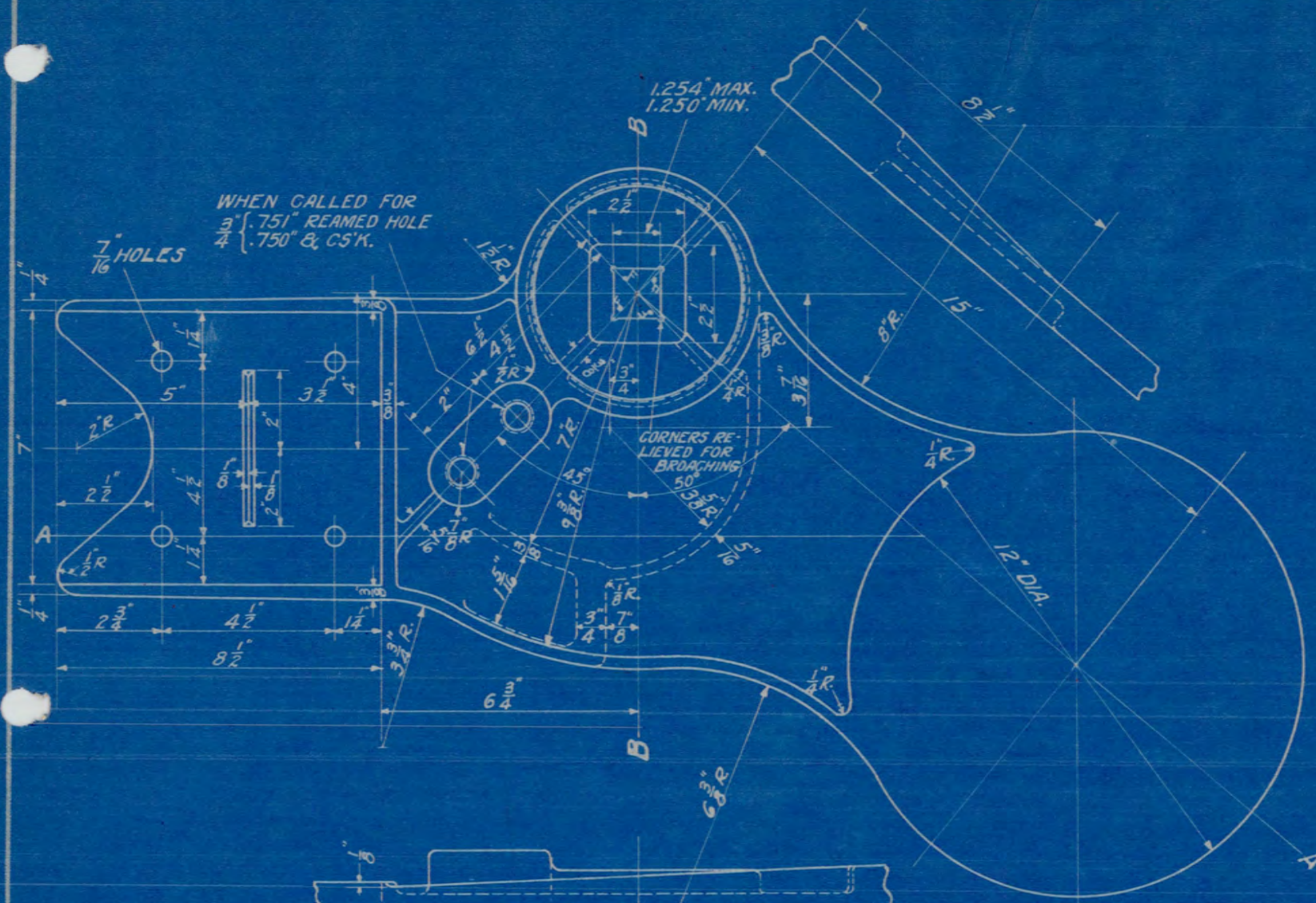
A.C.L.R.R.

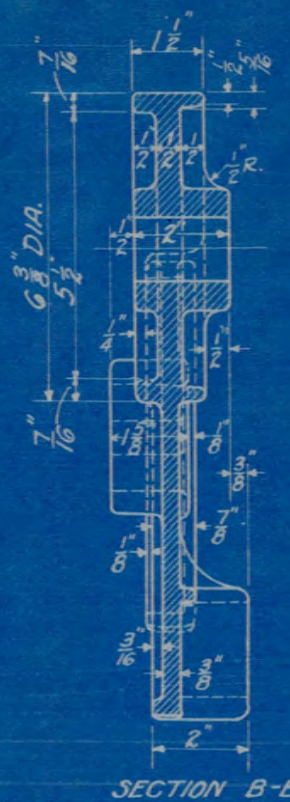
St'd. upper quadrant blade grip
for
Power operated dwarf signal.
Signal Engrs. Office Wilmington, N.C.

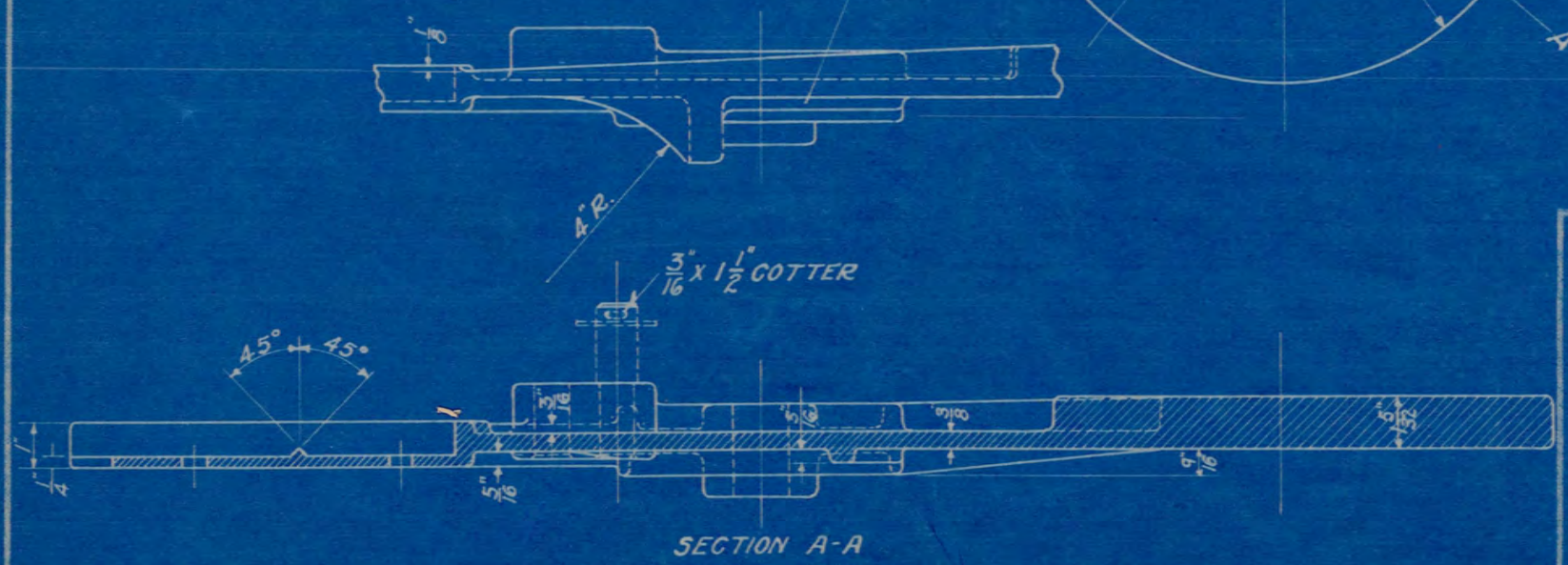
Approved: Kennedy, Chief Engr.
Correct: G. Holloway, Supt. Signals.

WAS A-106 2-1-29	Supersedes A-106 of Oct. 16, 1922.	Drawn Dec. 26, 1923.	Traced W.E.H.	A-71

Scale: ½ size.







A.C.L.R.R.

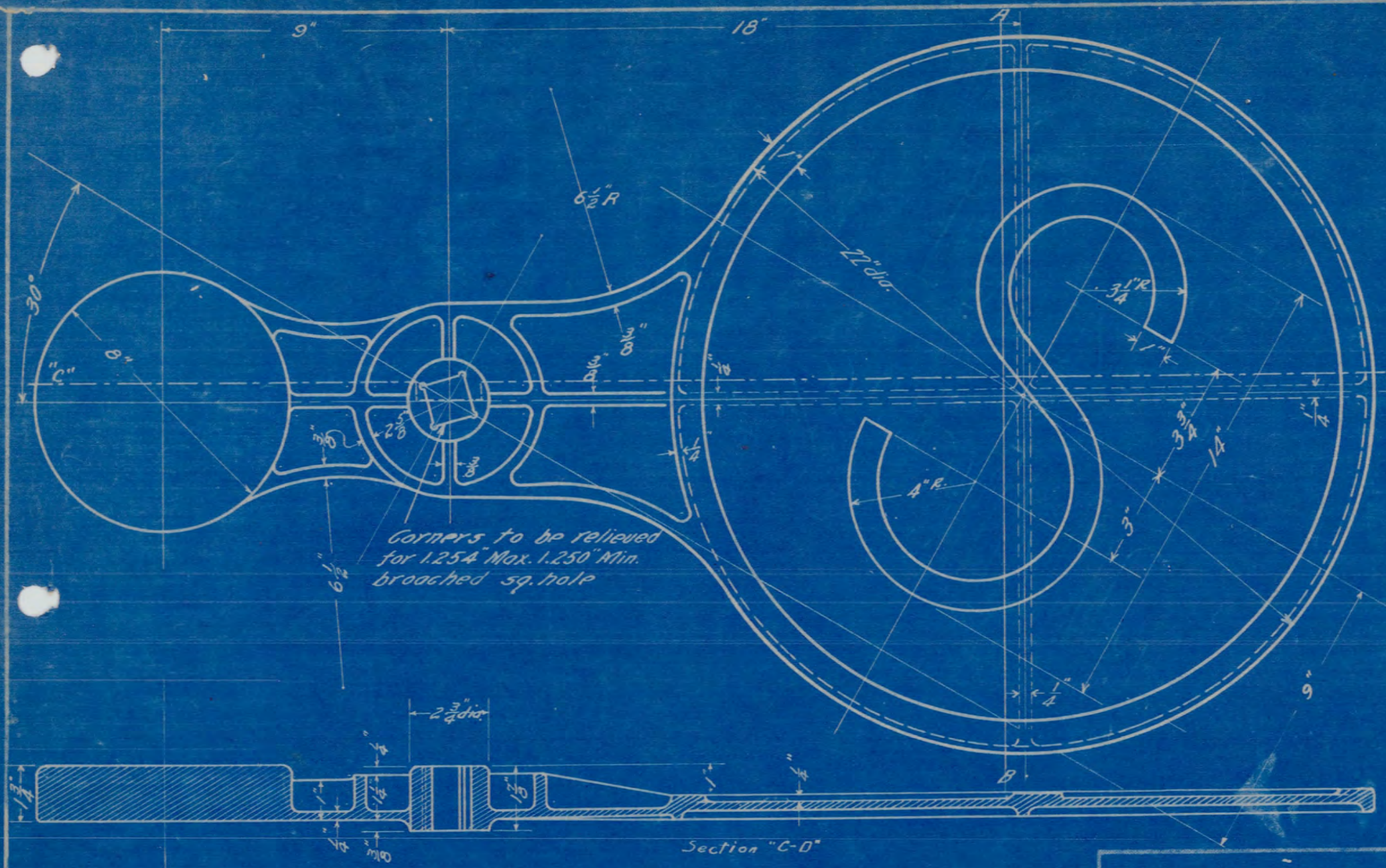
ST'D. BLADE GRIP
FOR
SMASH BOARDS

Signal Engr's Office Wilmington, N.C.

Approved Correct

Chief Engr		Supt. of Signals.
Drawn: W.E.H. FROM U.S.&S. PLAN C 7298 SHT. 103. 9-18-29.		A-71

Scale 3" - 12"



Note:
Material: Cast Iron.
Face of Disc to be enameled primrose yellow, 1" border and letter "S" black.

Scale 1" = 4"

A.C.L.R.R.

S'td. Take Siding Indicator Arms.
For U.S.&S.Co. Style "S" Signals Only.

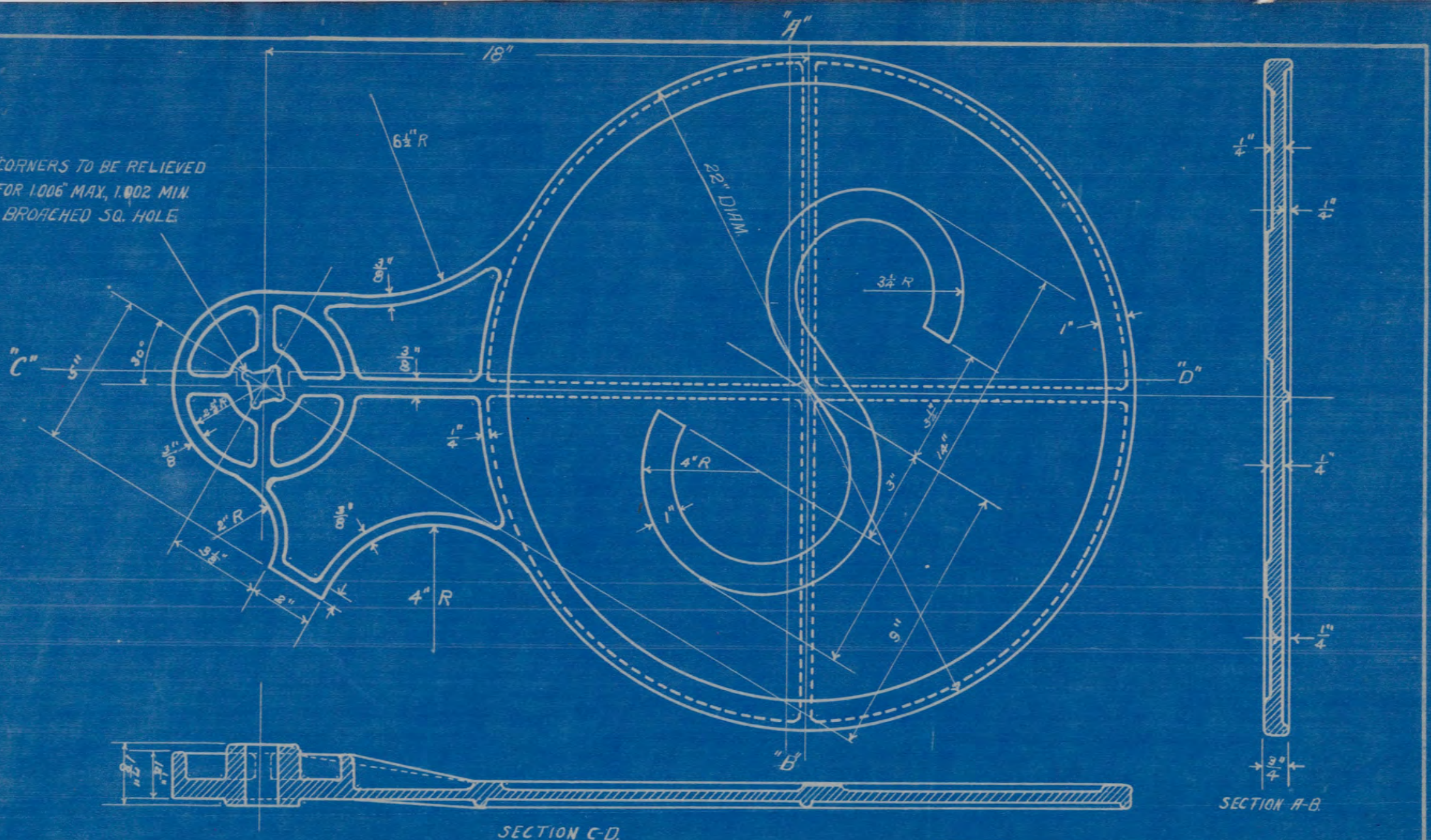
Signal Engrs Office Wilmington, N.C.

Approved: Chief Engr

Correct: Supt. Signals

Revised:	Drawn	Traced	
10-13-26.	Sept. 26, 1923	W.E.H.	A 71

Sheet 5 of 6 sheets.



SECTION C-D.

SECTION A-B.

NOTE:

MATERIAL: CAST IRON.

FACE OF DISC TO BE ENAMELED PRIMROSE YELLOW.

1" BORDER AND LETTER "S" BLACK.

Scale: 3" = 12"

A.C.L.R.R.

STANDARD TAKE SIDING INDICATOR ARMS
FOR U.S.&S. Co. STYLE T.2 SIGNALS.

Signal Engr's. Office: Wilmington, N.C.

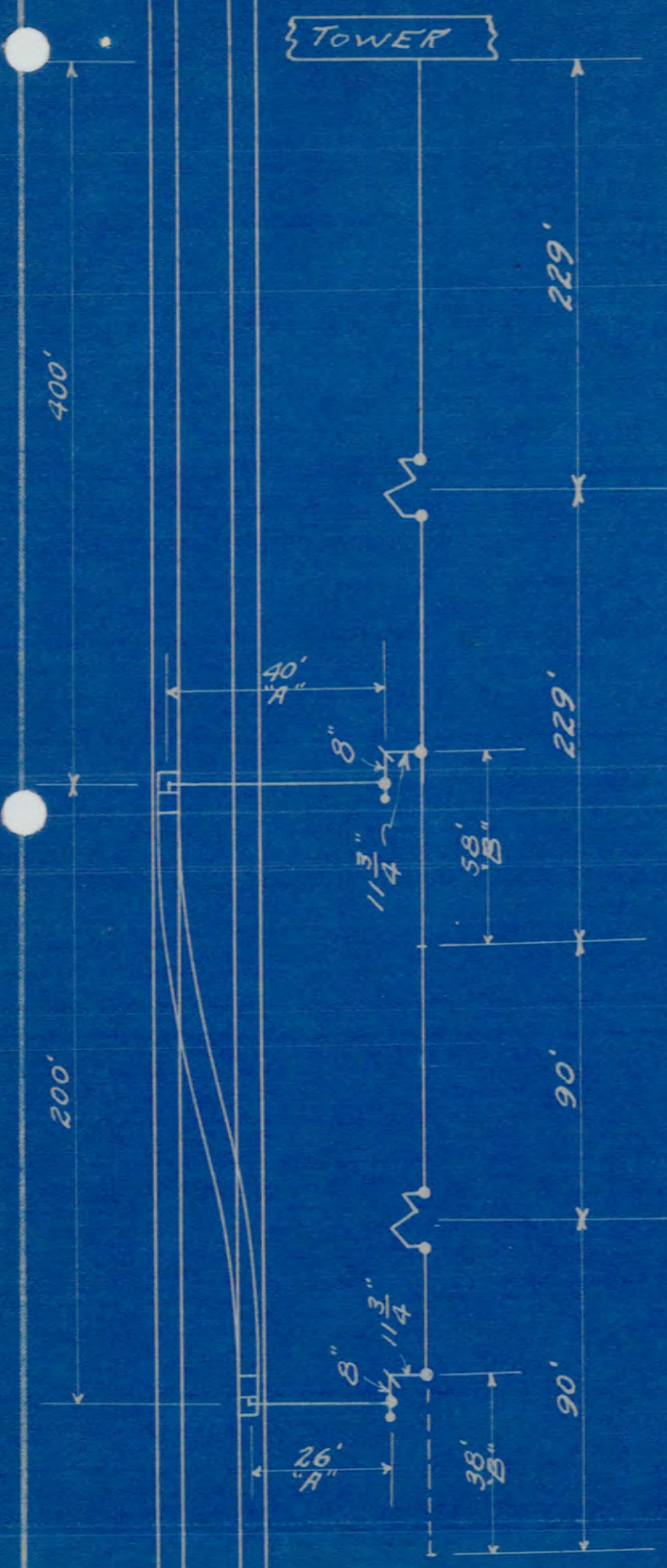
Approved Correct

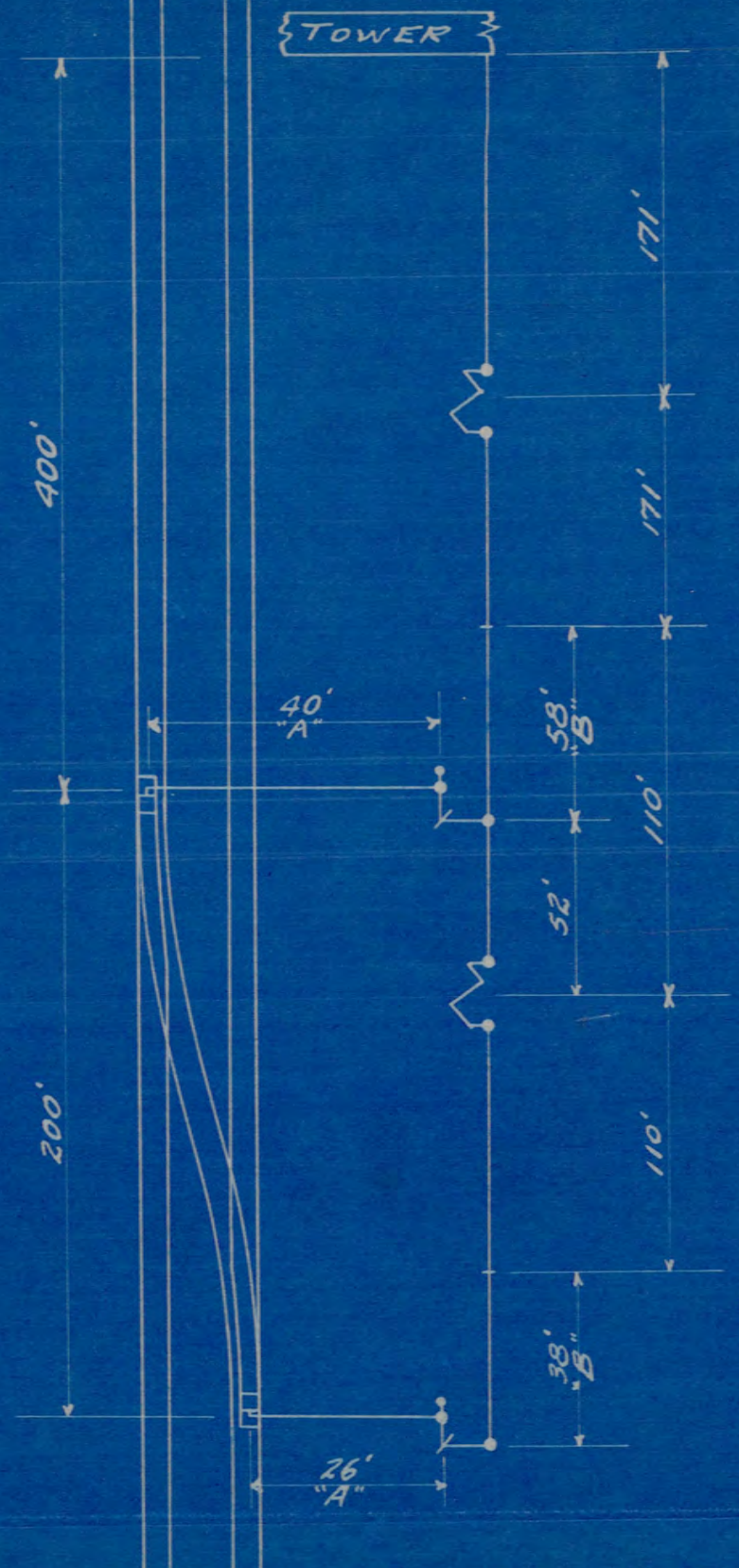
Chief Engr. Signal Engr.

Drawn Feb. 4. 1927.
B.C.

A-71

Sheet 6 of 6 sheets.





Setting of Compensators

When drilling holes for Grant arms or switch rods, the length of Grant arms or switch rods will not be equal to length of pipe unequal lengths, the length of pipe "B" to be compensated for by following method:

"A" to find length of Grant on lever side.

"B" use following method:

Length of Grant on switch side.

Divided by 8

Example:

40' = Length of Grant on lever side.

11 3/4" = Length of Grant on switch side.

8" = Length of pipe

THEN:

$$\frac{40 \times 11.75}{8} = 58'$$

With normal compensation

With reverse compensation

A.C.L.R.R.

COMPENSATION

Instructions for applying.

Signal Engrs. Office Wilmington, N.C.

Approved

Correct

Chief Engr.

Signal Engr.

Drawn C.E.L.S. Mar. 6, 1929.

A — 72

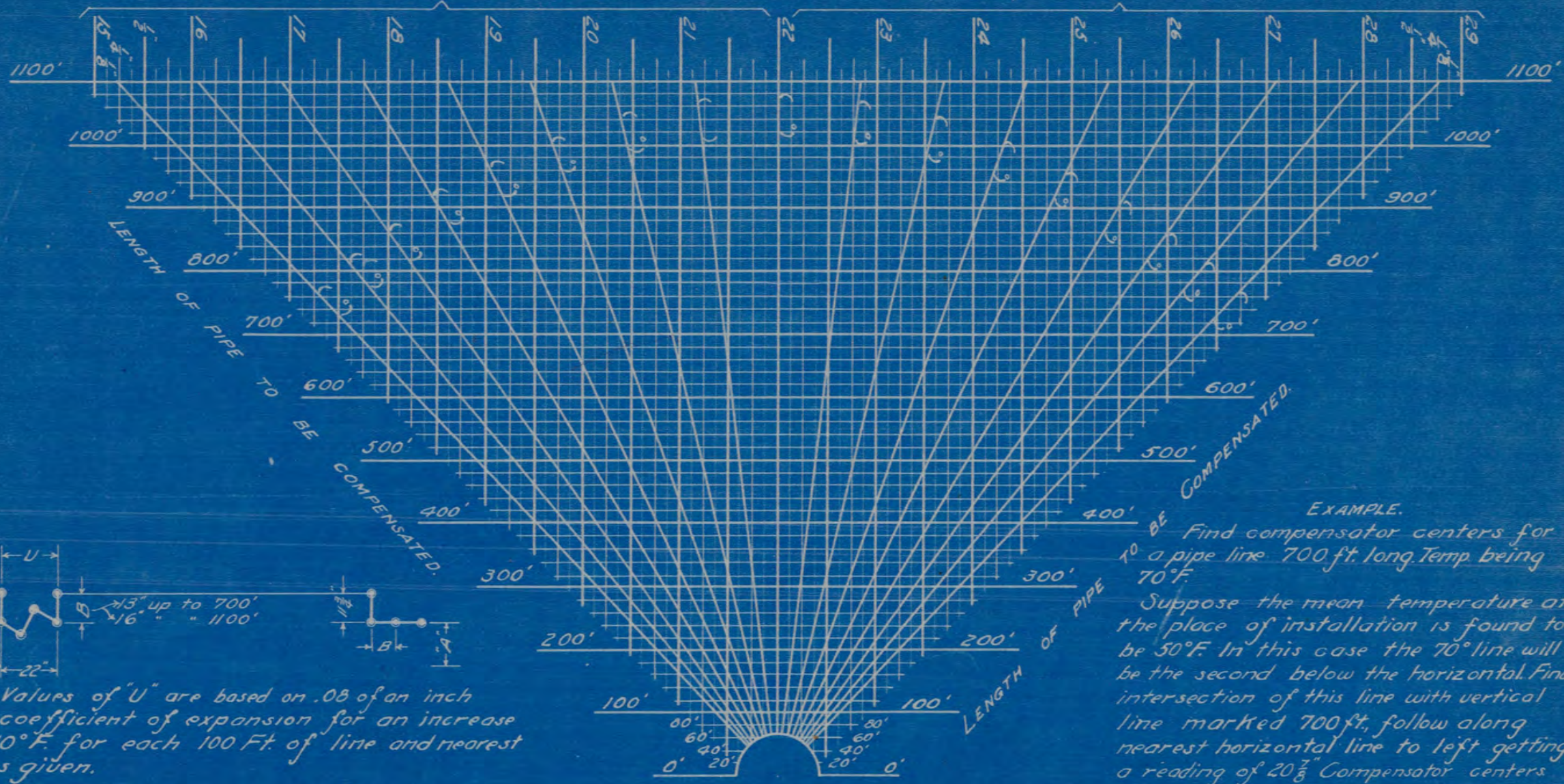
Supersedes A-971 of Aug. 12, 1925.

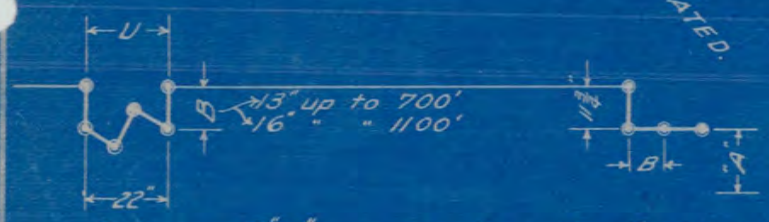
Scale:

Sheet 2

COMPENSATOR CENTERS IN INCHES OR FRACTIONS THEREOF.

When temperature is above mean. | When temperature is below mean.





Values of "U" are based on .08 of an inch as coefficient of expansion for an increase of 10° F. for each 100 Ft. of line and nearest 1/16" is given.

DIRECTIONS FOR USING

Ascertain the mean temperature for the locality in which the chart is to be used. Mark the horizontal line at 22 with this number. Mark each oblique line to represent intervals of 10°, increasing downwards and decreasing upwards, by filling in brackets, shown thus ( ). To determine proper compensation centers for a given temperature and length of pipe, find intersection of oblique line corresponding to the temperature at the time the compensator is to be set, and the vertical line corresponding to the length of pipe to be compensated. Follow along the nearest horizontal line to the left and get reading on scale.

Scale

EXAMPLE.

Find compensator centers for a pipe line 700 ft. long. Temp being 70° F.

Suppose the mean temperature at the place of installation is found to be 50° F. In this case the 70° line will be the second below the horizontal. Find intersection of this line with vertical line marked 700 ft., follow along nearest horizontal line to left getting a reading of 20 7/8" Compensator centers

A.C.L.R.R.

Compensation Chart.

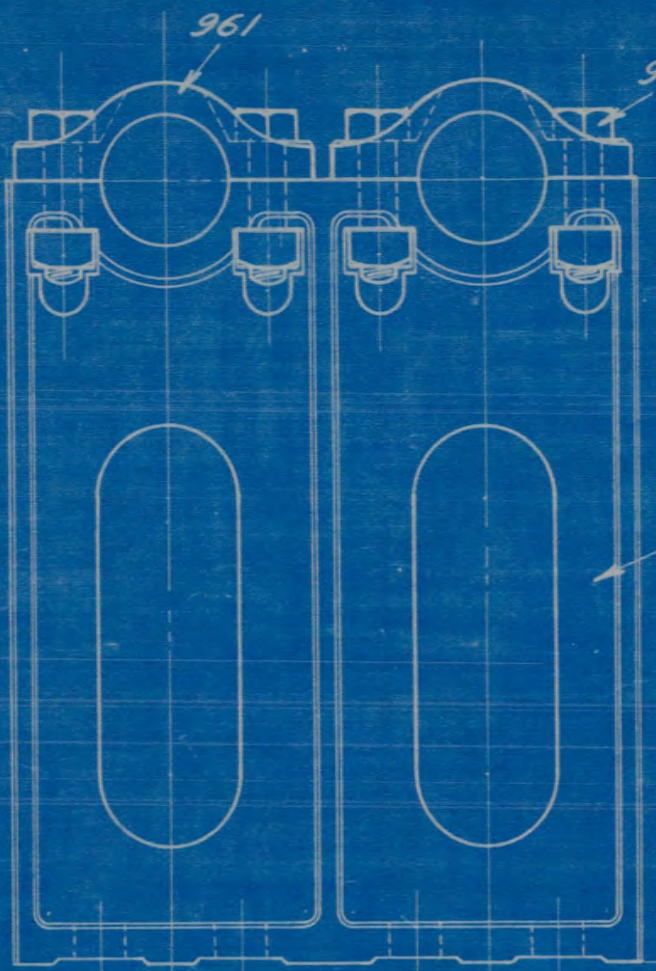
Signal Engrs. Office: Wilmington, N.C.

Approved: Chief Engr

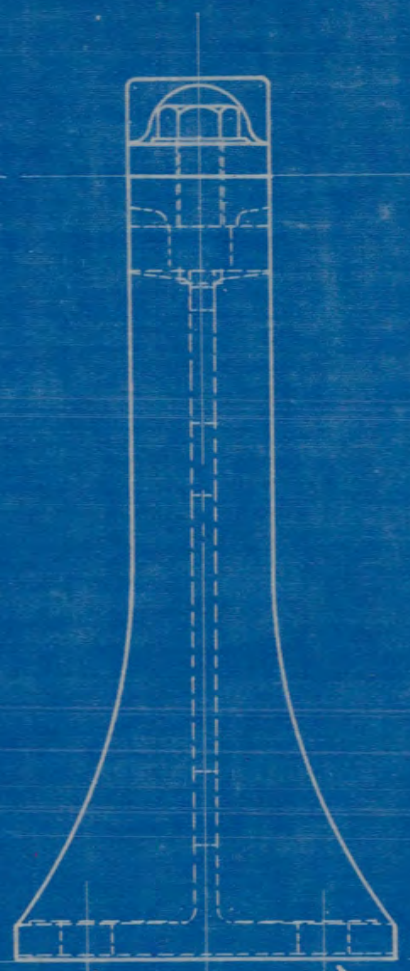
Correct: Supt. Signals.

Drawn	Supersedes	
Jan. 1st 1924	A-72 of 4-20-20	A- 72

Sheet 3



2 Way Stand Complete



1 Way Stand Complete

List of Material

For 1 Way	For 2 Way	Name	No
1		Bearing	960
	1	"	970
1	2	Cap	961
2	4	Bolt & Nut	962

Scale 4" = 12"

A.C.L.R.R.

Std. One and Two Way Rocker Shaft Bearings Comp.

Signal Engrs. Office Wilmington, N.C.

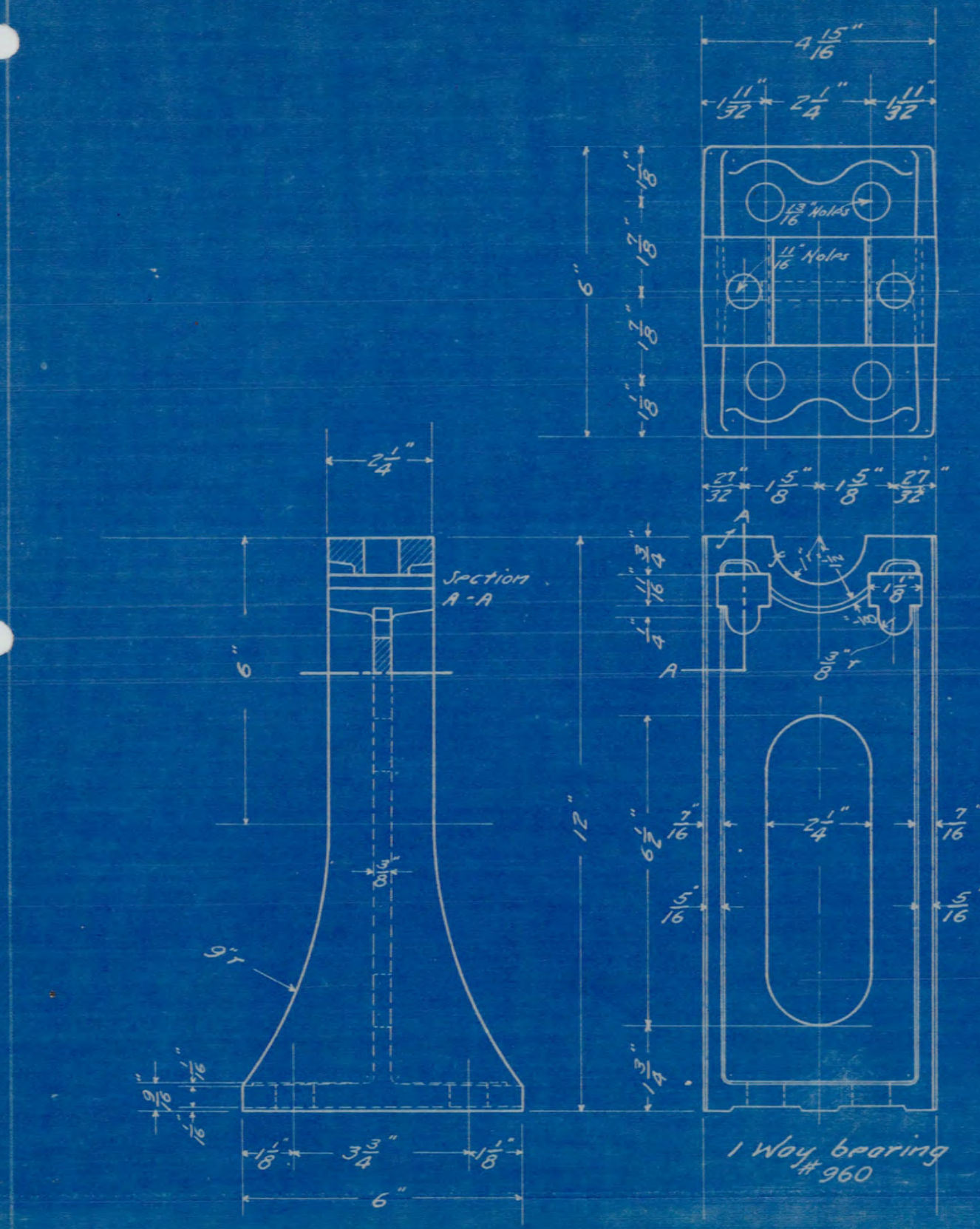
Approved Correct

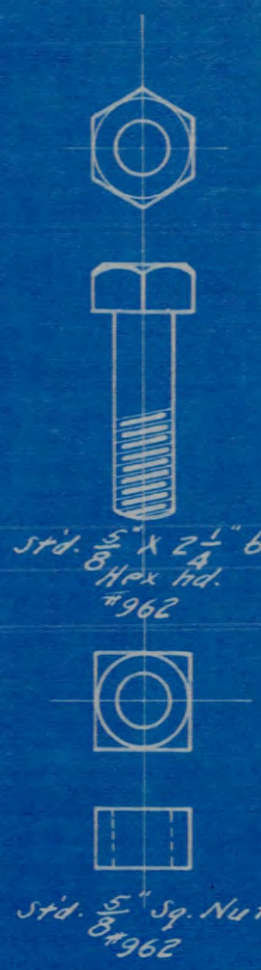
Chief Engr. Signal Engr.

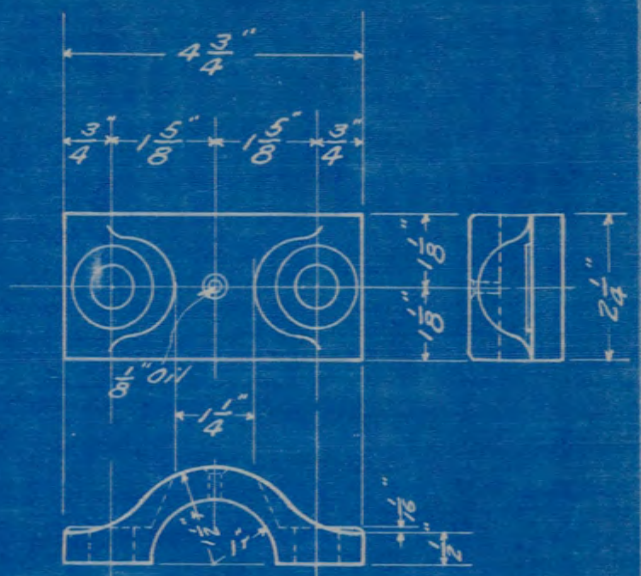
Drawn Feb. 11, 1916.

A-73

SHEET 1 OF 6 SHEETS







Cap #961

All materials Mall. iron.

A.C.L.R.R.

Std. One Way Rocker Shaft Bearing.

Signal Engrs Office Wilmington N.C.

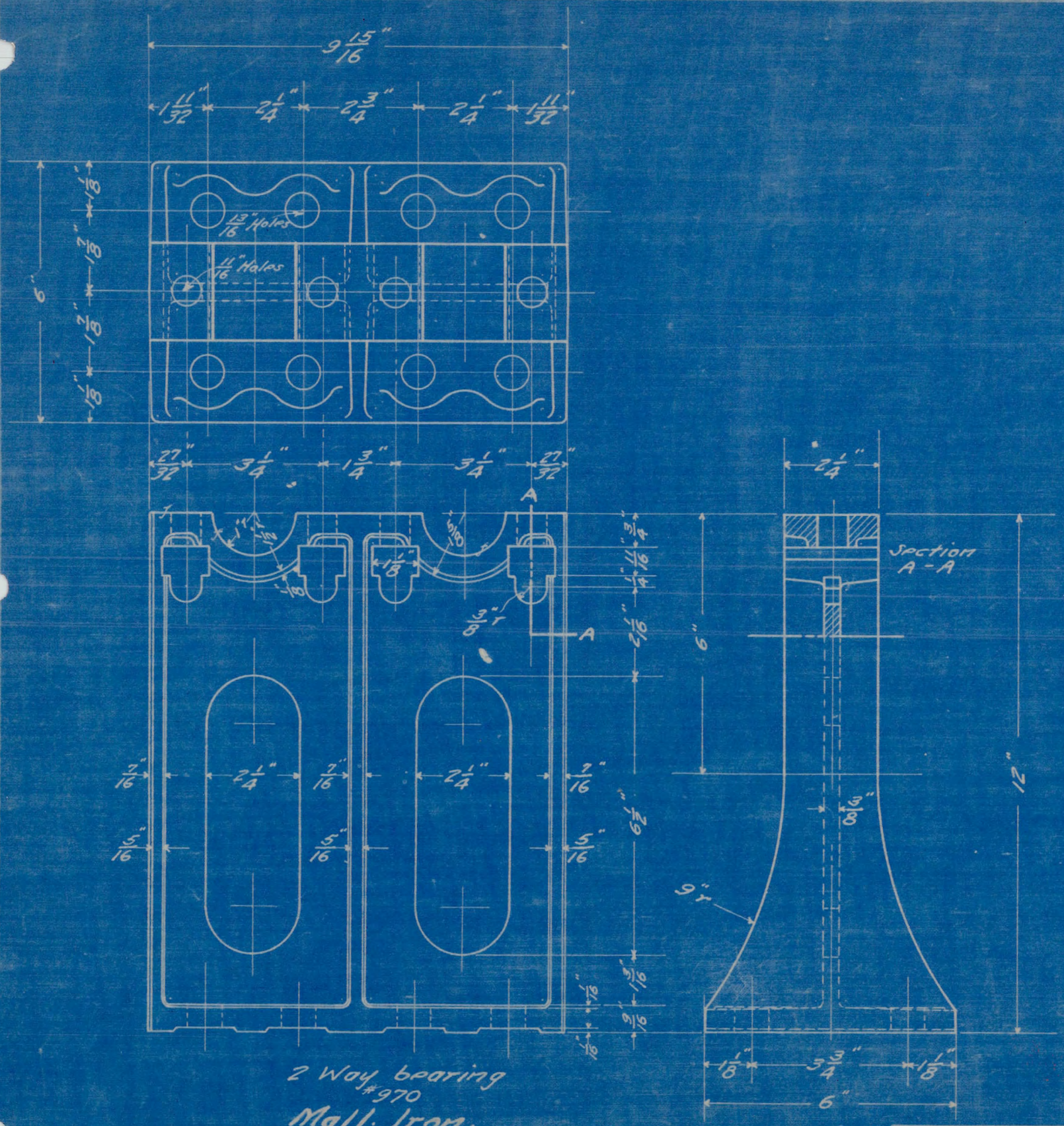
Approved Chief Engr. Correct Signal Engr.

WAS A-96. 10-25-28.

Drawn Feb. 11, 1916.

A-73

Scale 4" = 12"



2 Way bearing
#970
Mall. Iron.

Scale 4" = 12"

A.C.L.R.R.

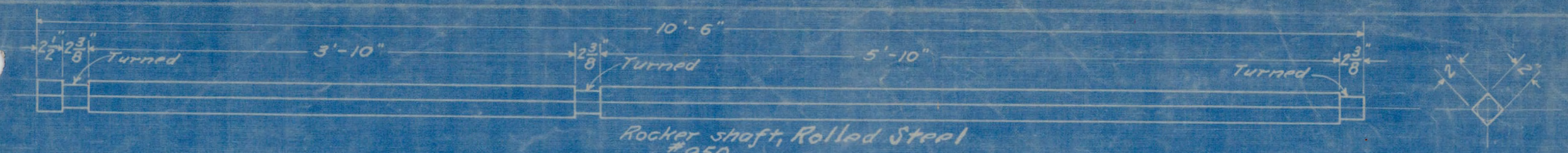
Std. two way
Rocker Shaft Bearing.

Signal Engrs. Office Wilmington, N.C.

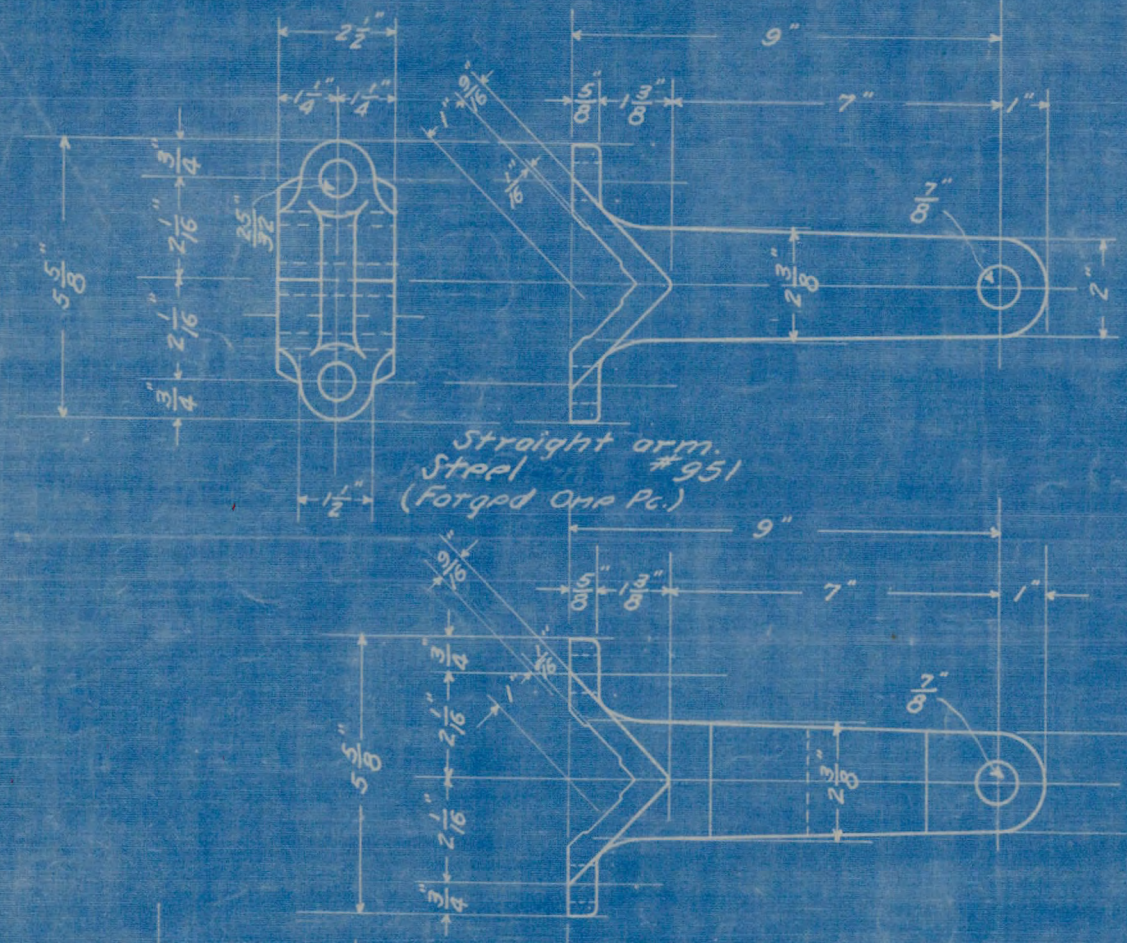
Approved _____ Chief Engr.

Correct _____ Signal Engr.

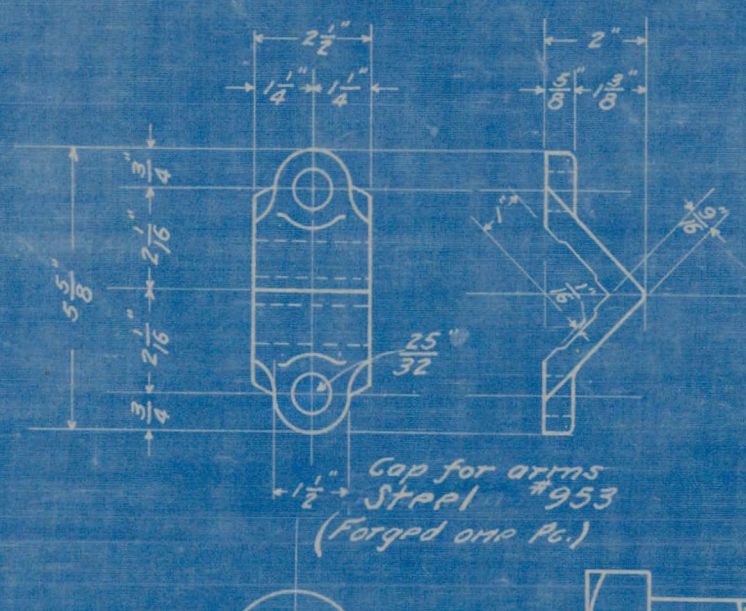
WAS A-97. 10-25-28.	Drawn C.H.W. Feb. 11, 1916.		A — 73



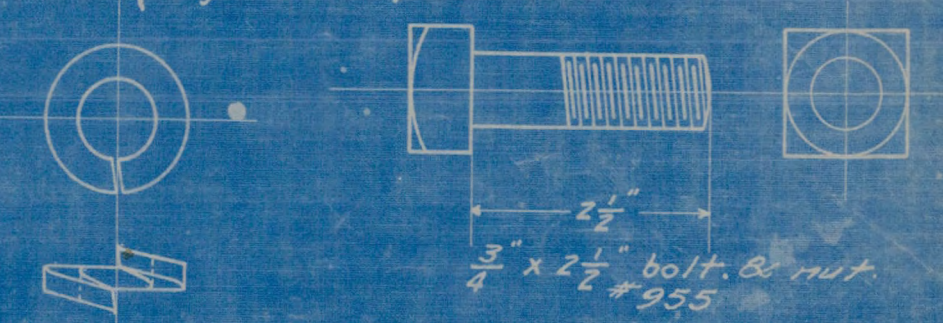
Rocker shaft, Rolled Steel
#950

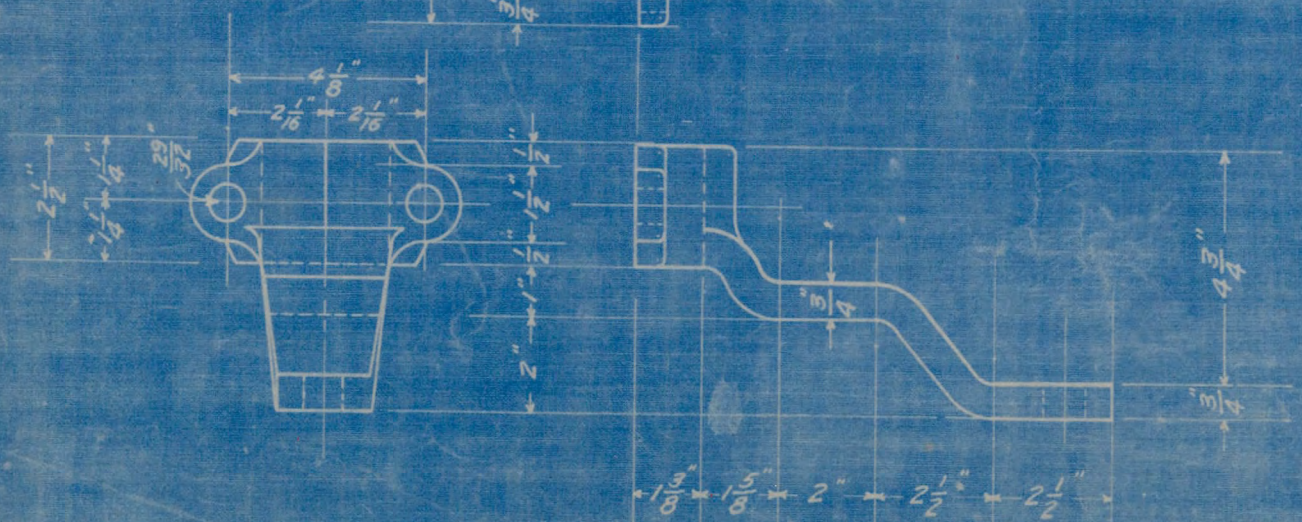


Straight arm.
Steel #951
(Forged One Pc.)



Cap for arms
Steel #953
(Forged one Pc.)





Bent arm. #952 Steel. (Forged One Pc.)

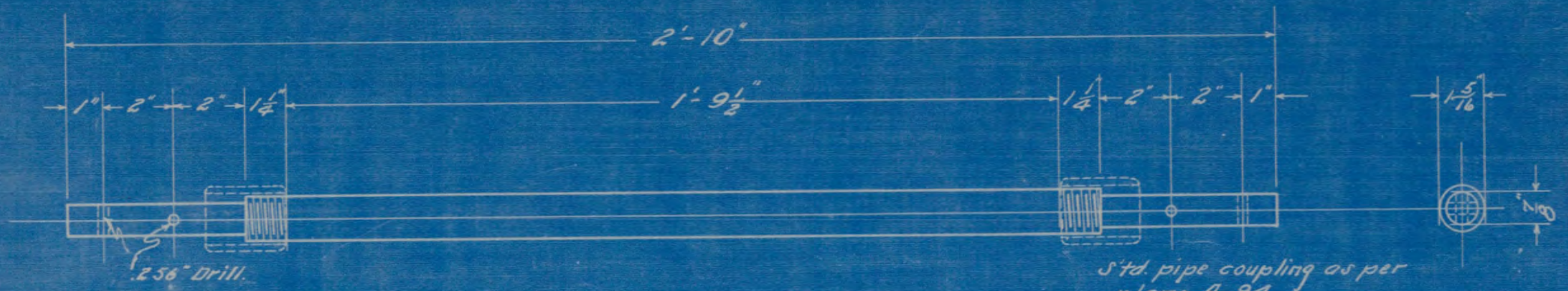
Scale 3" = 12"

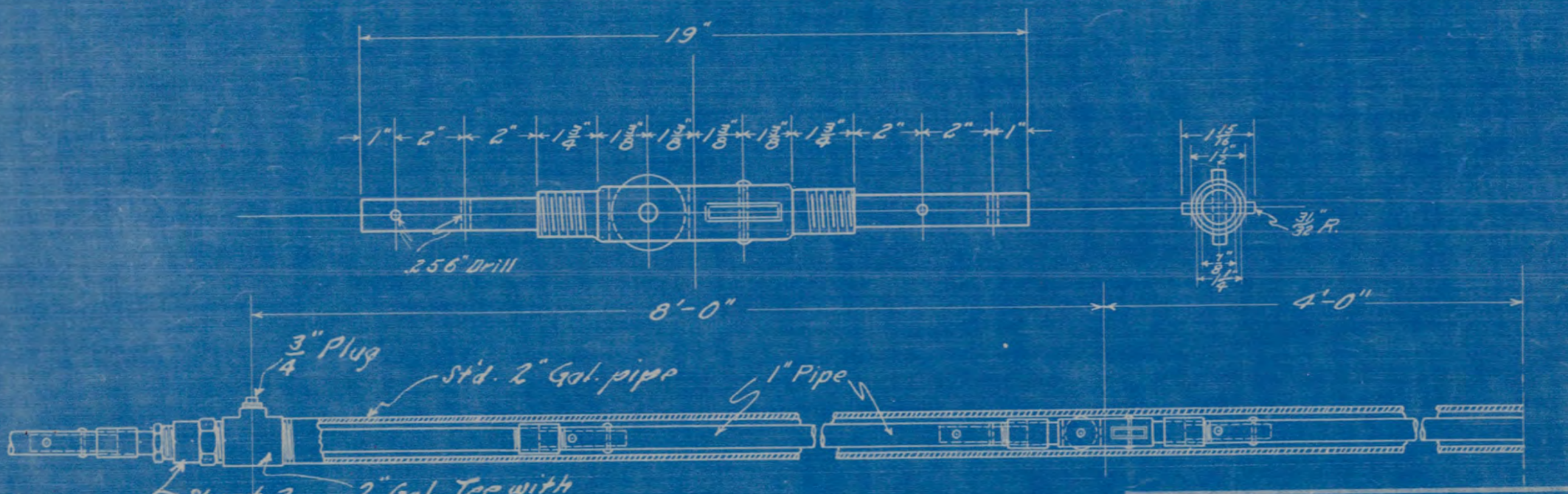
A.C.L.R.R.

Rocker Shafts.
Details of rocker shaft and arms.

Signal Engrs. Office, Wilmington, N.C.
Approved
Correct
Signal Engr.
Chief Engr.

Was A-95 Jan. 26, 1929.	Feb. 27, 1913.	A—73





Assembly.
Scale 1 1/2" = 12'-0"

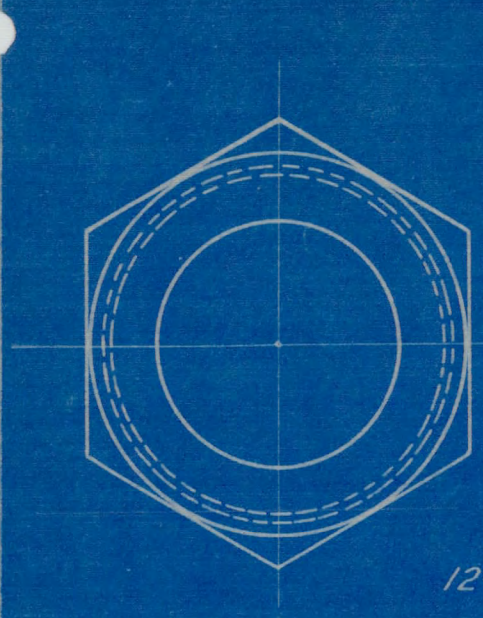
A.C.L.R.R.

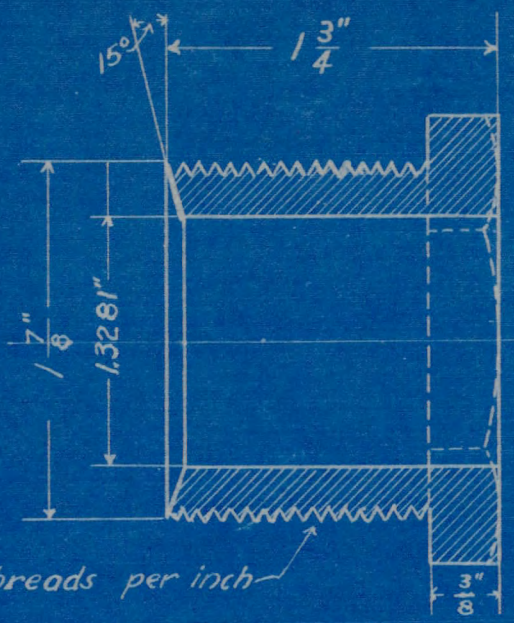
Double Tang end Pipe Coupler or Plunger and Underground Pipe Carrier.
(Chicago Ry. Signal & Supply Co. Patent)
Signal Engrs. Office Wilmington, N.C.

Approved [signature] Chief Engr.
Correct [signature] Supt. Signals.

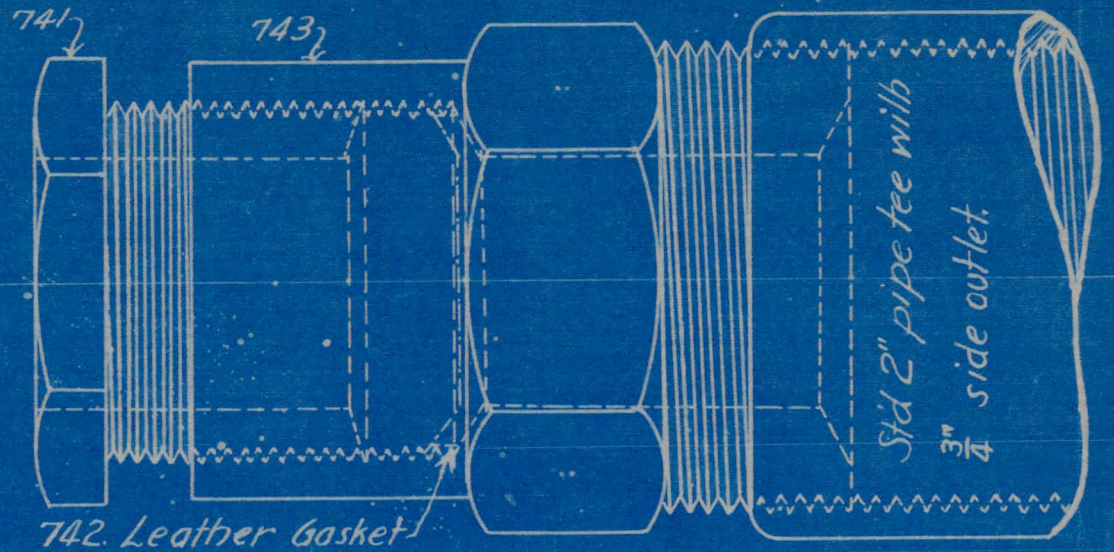
Scale 3" = 12"	Was A-131 Mar. 5, 1929	Supersedes A-131 of Aug. 26, 1912	Drawn Oct. 12th, 1923	A-74

Sheet 1



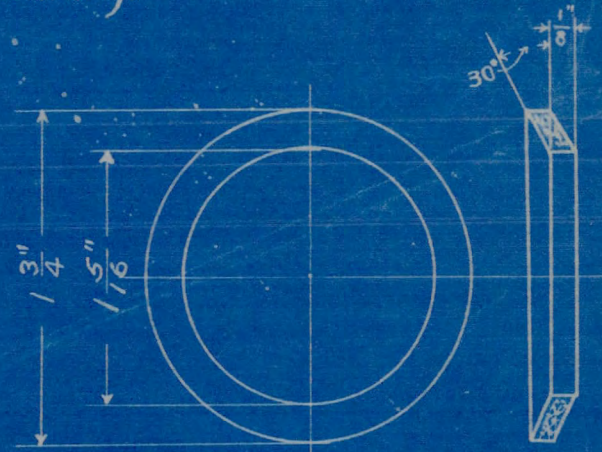


741. Bushing (Bronze)



742. Leather Gasket

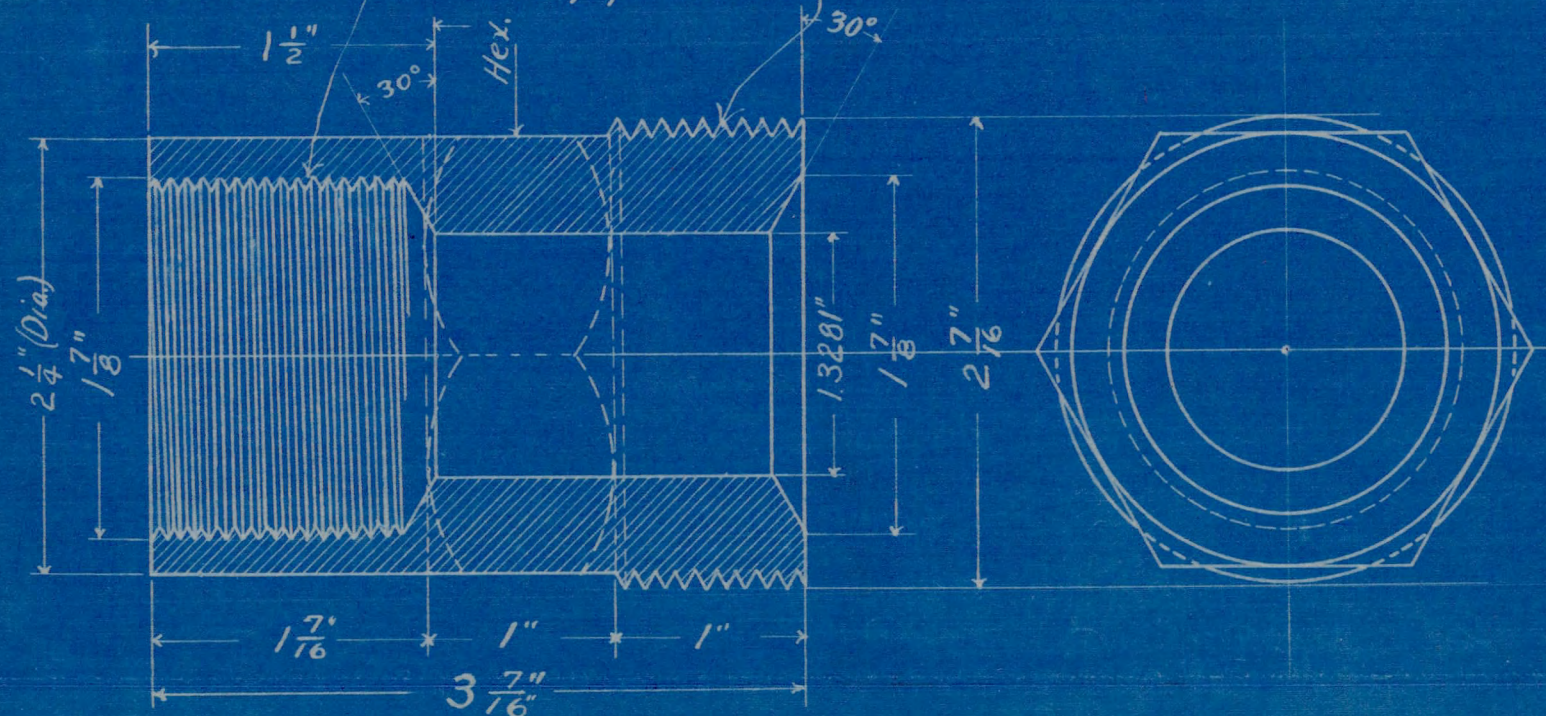
Assembly.



742. Leather Gasket.

12-Threads per inch

Std. 2" pipe threads



743. M.Iron. Extension Gland.

Scale: Full Size.

A.C.L.R.R.

Std. Stuffing Box for 1" Pipe

Signal Engrs. Office: Wilmington, N.C.

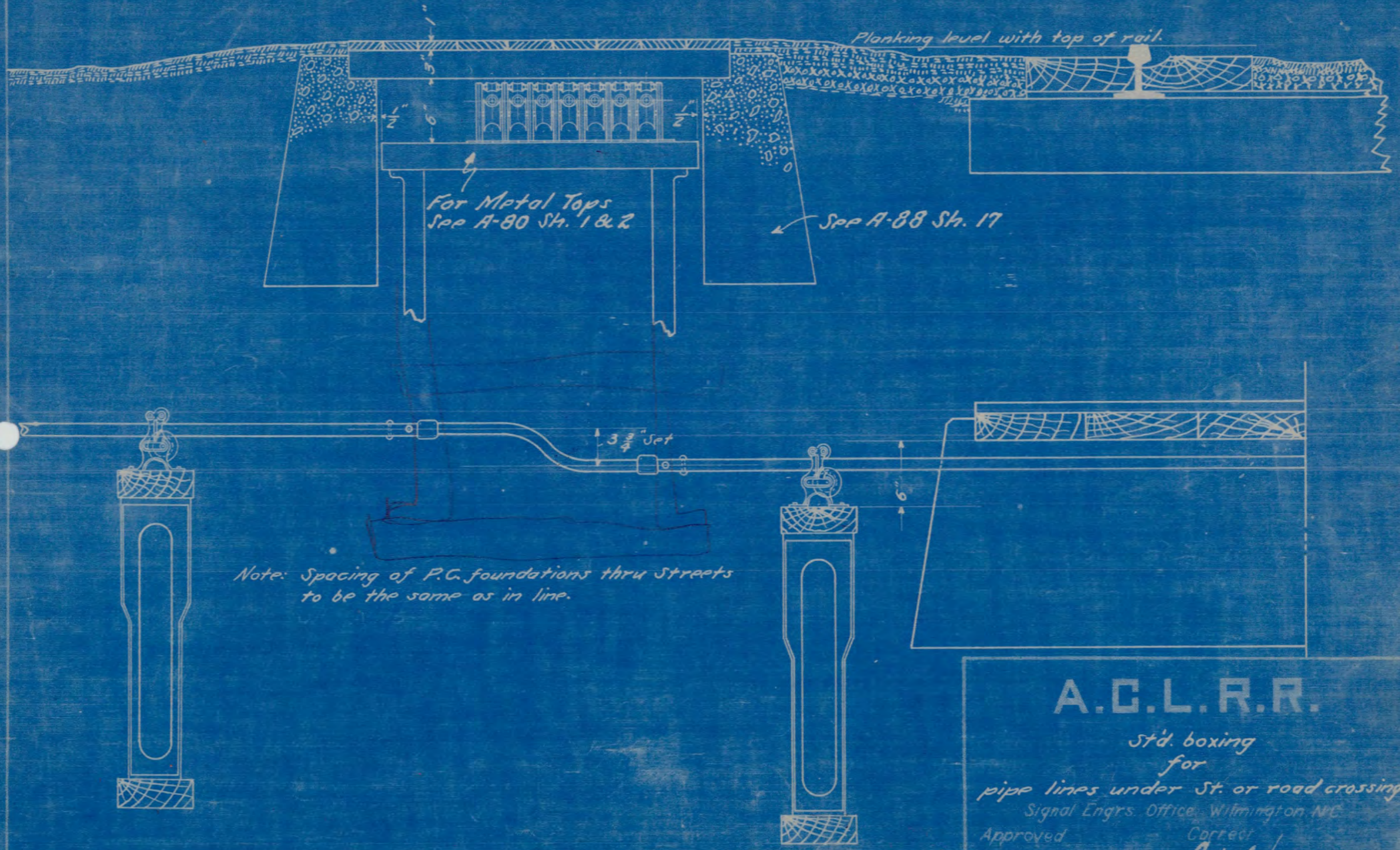
Approved: Chief Engr.

Correct: Supt. Signals.

Supersedes A-74 of June 15, 1909.

Drawn Oct. 16, 1923.

A-74



Note: Spacing of P.C. foundations thru streets to be the same as in line.

A.C.L.R.R.

Std. boxing
for
pipe lines under St. or road crossings.
Signal Engrs. Office, Wilmington, N.C.

Approved _____ Correct

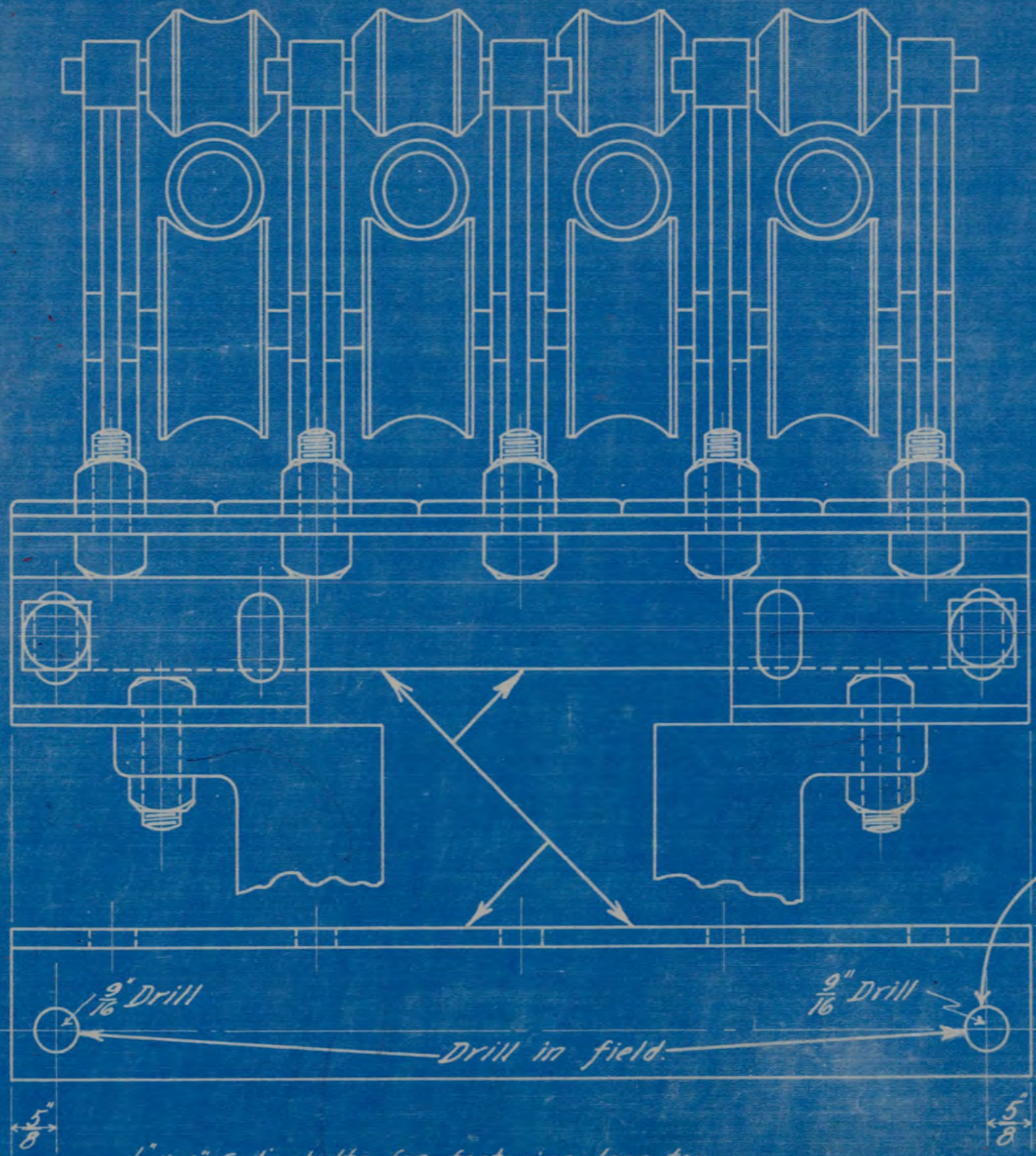
G. T. Galloway Jr.
Chief Engr.

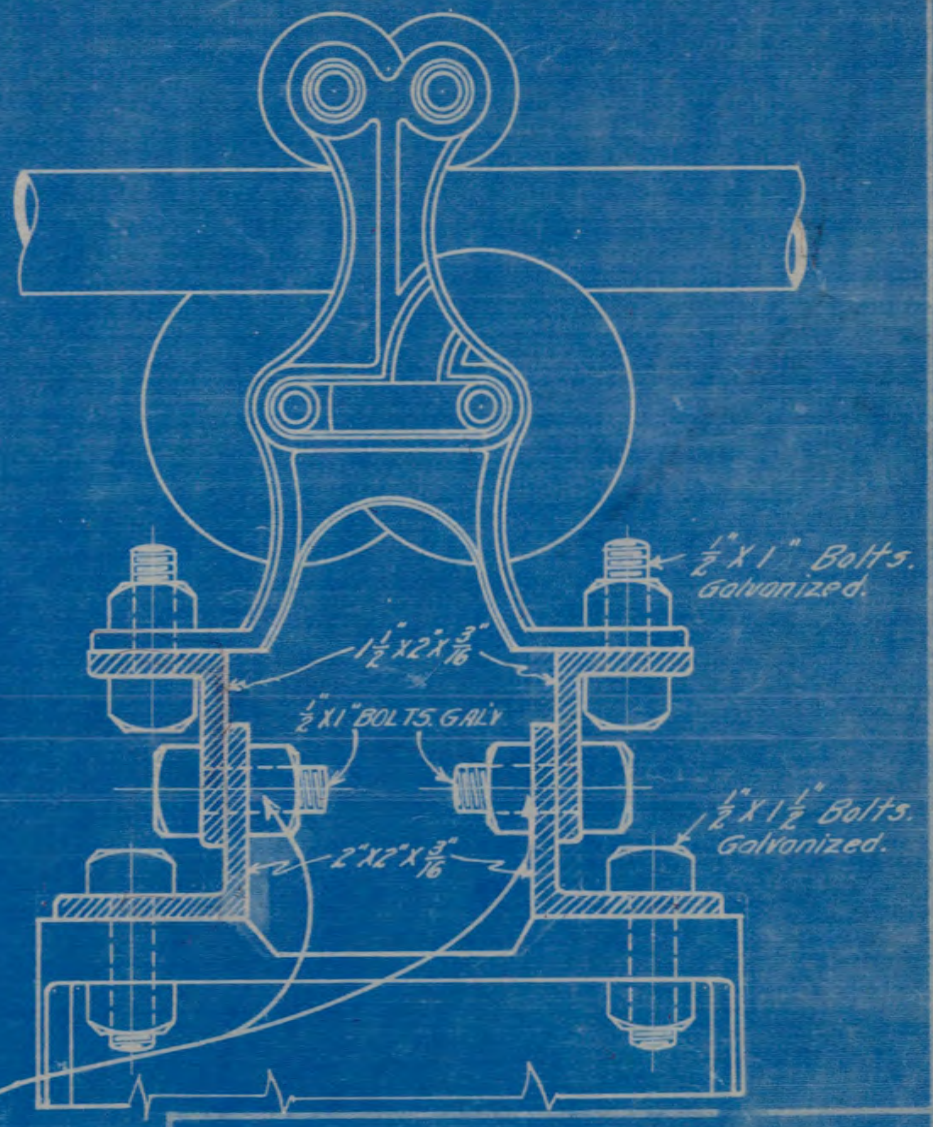
Scale 3" = 12"

	Was A-129 Mar. 5, 1929.	Revised Feb. 23, 1914.	Drawn A.E.W. Apr. 19, 1913.

A-74

Sheet 3





1/2" x 4" Galv. bolts for fastening legs to wood bottoms and 1-1/2" cut washer.

A.C.L.R.R.

IDEAL STEEL PIPE CARRIER TOP ASSEMBLY.

Signal Engrs. Office Wilmington, N.C.

Approved — Correct

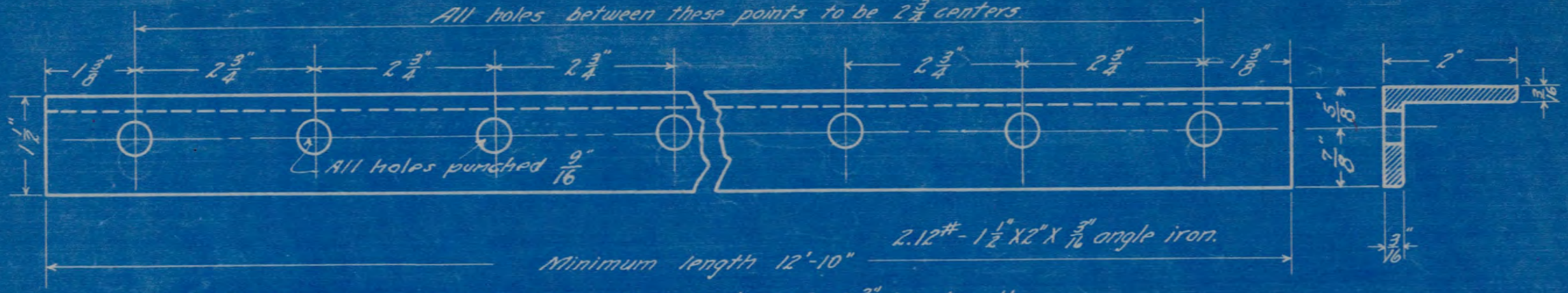
C. A. Holloway

Chief Engr — Supt. of Signals.

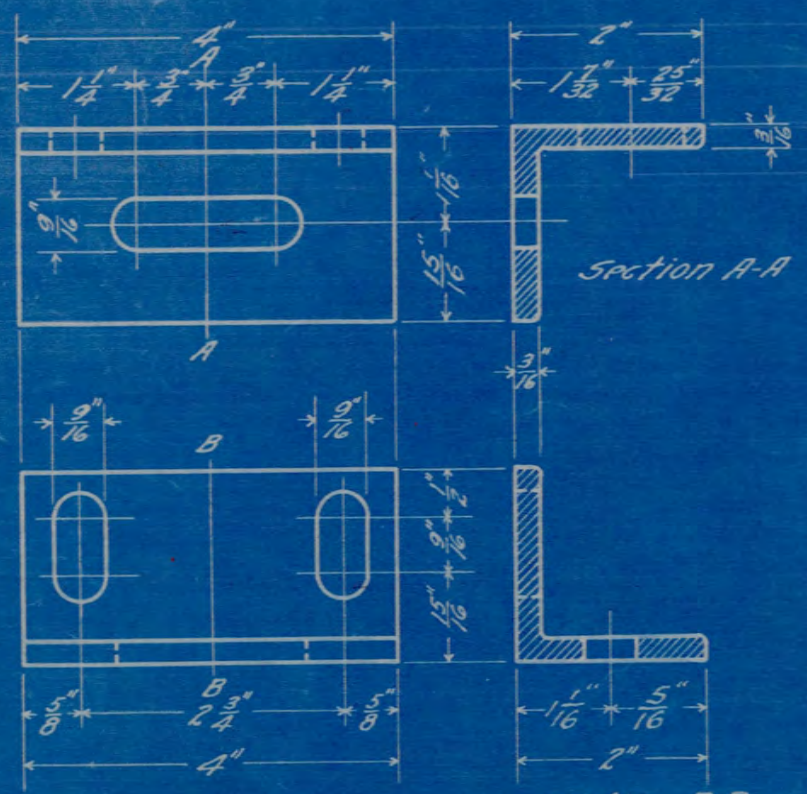
Scale: Half size.

Revised 10-10-29.	Was A-130 Mar. 5, 1929	Revised size of bolts. Also bolts to be galv. 8-30-27.	Drawn C.A.W. 9-2-24	Traced N.E.H.	A-80

Sheet 1 of 2 sheets



Note:- Material can be furnished in multiples of 2 3/4" in lengths beyond the minimum up to 25'-8".
All material shall be hot galvanized after punching.



LUG
2.44# - 2" X 2" X 3/16" angle iron.

TABLE OF LENGTHS.			
WAY	LENGTH	WAY	LENGTH
1	13 3/4"	9	35 3/4"
2	16 1/2"	10	38 1/2"
3	19 1/4"	11	41 1/4"
4	22"	12	44"
5	24 3/4"	13	46 3/4"
6	27 1/2"	14	49 1/2"
7	30 1/4"	15	52 1/4"
8	33"	16	55"

Make all cuts on center between holes. In cutting mat'l. no piece shall be cut less than 13 3/4" (5 holes)

A.C.L.R.R.

IDEAL STEEL PIPE CARRIER TOP DETAILS

Patented

Signal Engrs. Office Wilmington, N.C.

Approved Correct

C. J. Holloway

Chief Engr. Supt. of Signals.

Scale: Half size.

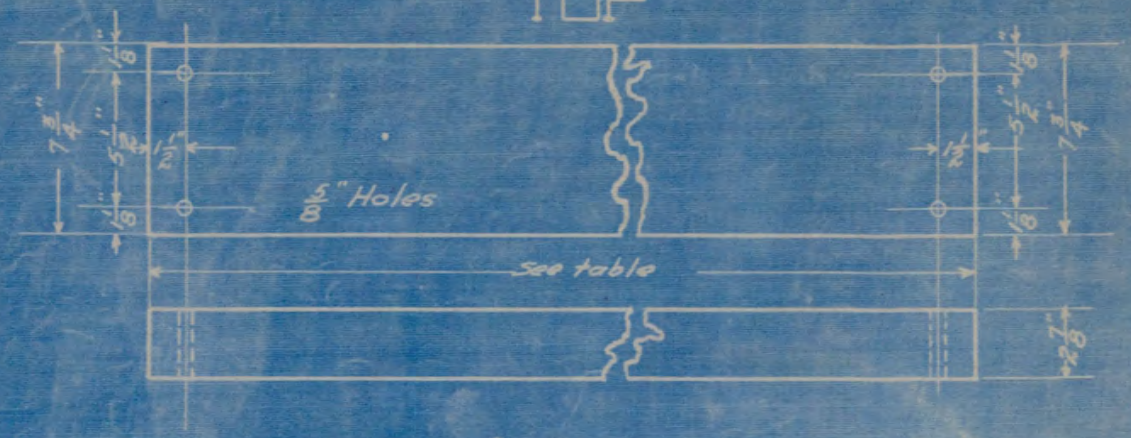
Revised 10-10-29.	Was A-130 Mar. 5, 1929	REVISED TABLE. 6-21-27.	Drawn C.A.W. 9-2-24	Traced W.E.H.	A- 80

Number wanted.	Ways	Space Req'd. for Pipe Carriers.	Length of tops and bottoms.
	1	5 1/2"	17 1/2"
	2	8 1/4"	20 1/4"
	3	11"	23"
	4	13 3/4"	25 3/4"
	5	16 1/2"	28 1/2"
	6	19 1/4"	31 1/4"
	7	22"	34"
	8	24 3/4"	36 3/4"
	9	27 1/2"	39 1/2"
	10	30 1/4"	42 1/4"
	11	33"	45"
	12	35 3/4"	47 3/4"
	13	38 1/2"	50 1/2"
	14	41 1/4"	53 1/4"
	15	44"	56"
	16	46 3/4"	58 3/4"
	17	49 1/2"	61 1/2"
	18	52 1/4"	64 1/4"
	19	55"	67"
	20	57 3/4"	69 3/4"
	21	60 1/4"	82 1/4"
	22	63"	85"
	23	65 3/4"	87 3/4"
	24	68 1/2"	90 1/2"

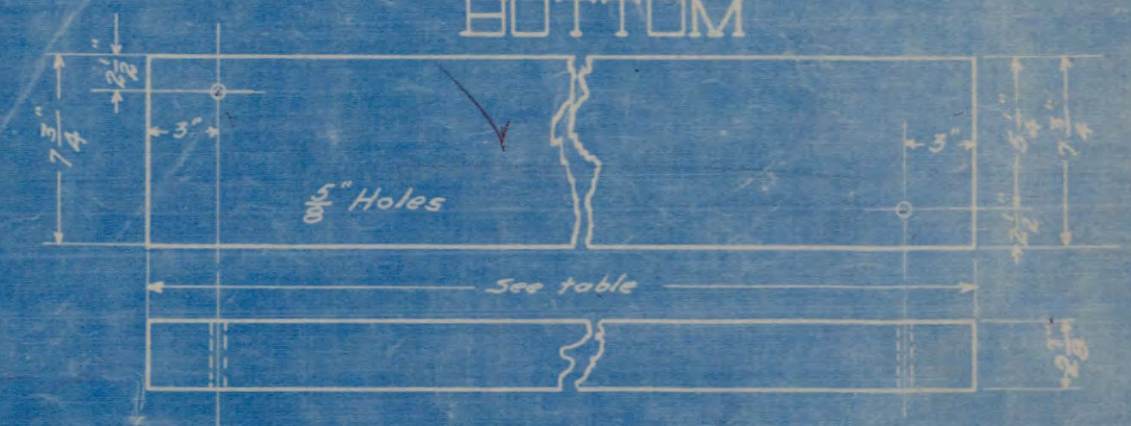
One way cross lead pipe carriers 12"

To be sent to

TOP



BOTTOM



Note:
Both top and bottom to be made of the best quality Yellow Pine, planed all sides and painted.

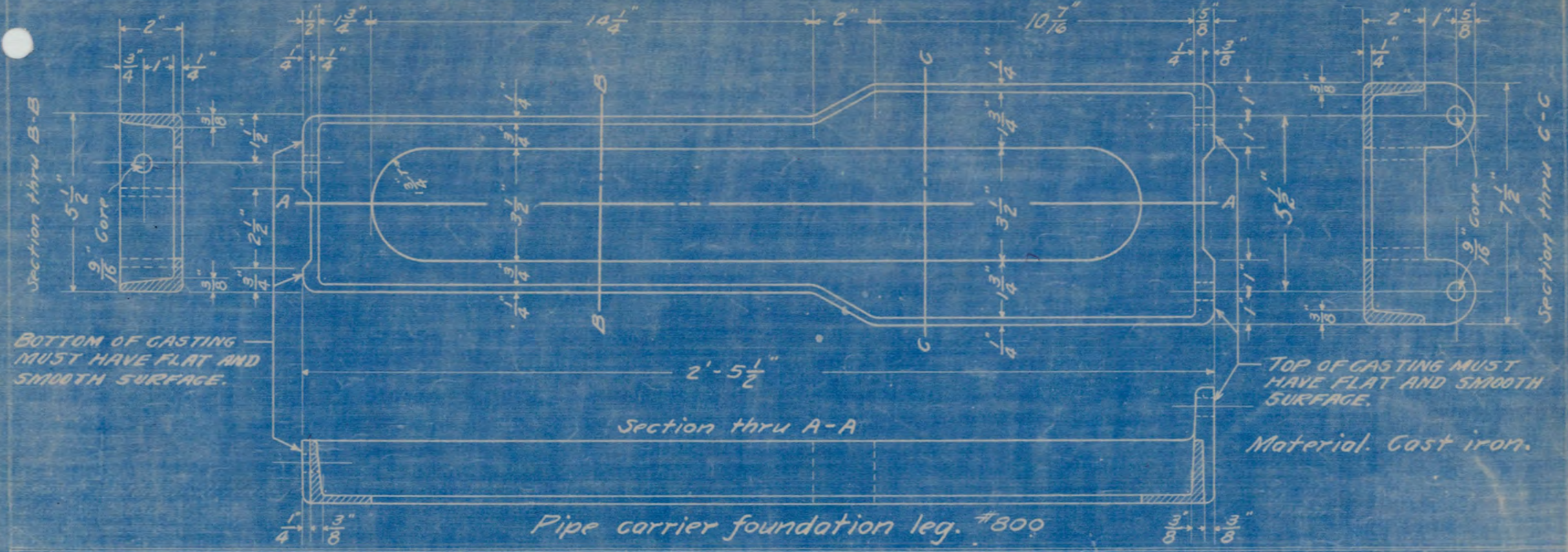
A. C. L. R. R.

Std. Wood Pipe Carrier
Foundation Tops and Bottoms.
Scale 1 1/2" = 1'

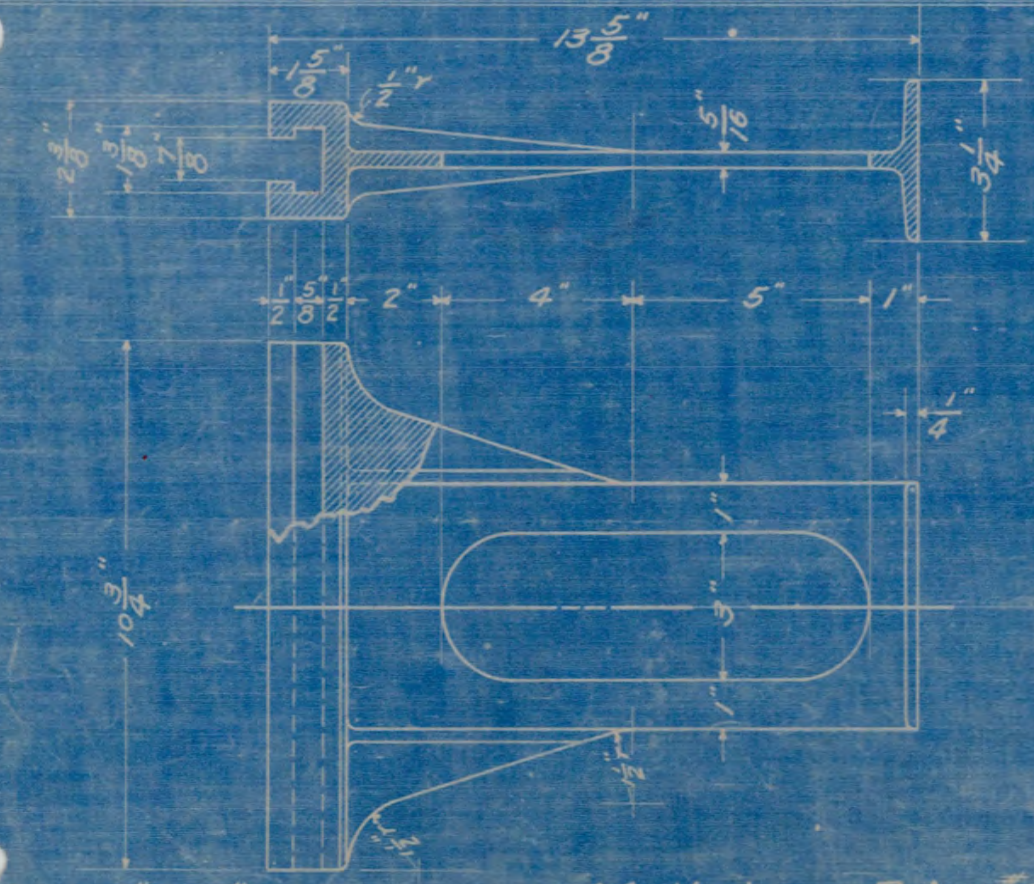
Signal Eng'rs. Office Wilmington, N.C.
Approved Correct
Chief Eng'r. Signal Eng'r.

	Was A-79 Mar. 5, 1929.	Drawn C.H.H. Feb. 21, 1907.	Redrawn C.G.W. Aug. 10, 1908.	A-80

Sheet 3


Section thru B-B
9" Core
BOTTOM OF CASTING MUST HAVE FLAT AND SMOOTH SURFACE.
2'-5 1/2"
Section thru A-A
Section thru C-C
TOP OF CASTING MUST HAVE FLAT AND SMOOTH SURFACE.
Material. Cast iron.

Pipe carrier foundation leg. #800



Scale: 3" = 12"

Mall. iron Peir. #801

Revised Aug. 3, '27	
Error in dimention changed. Feb. 21, 1924	
Supersedes A-80 of Dec. 2-3, 1908	Drawn — C.H.W. Feb. 25, 1913.

A.C.L.R.R.

Std. pipe carrier foundation leg and mall. iron peir.

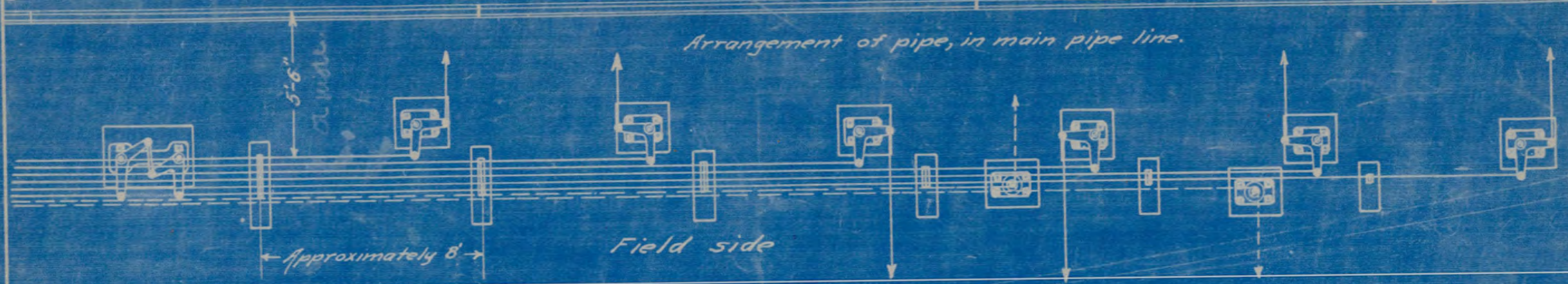
Signal Engrs. Office: Wilmington, N.C.

Approved — Chief Engr.

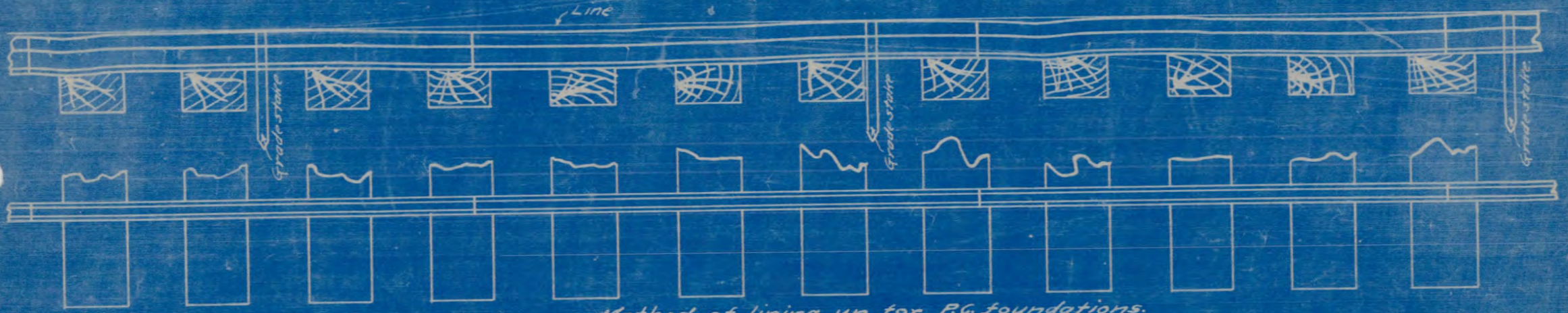
Correct — Signal Engr.

A—80

Sheet 4



Arrangement of pipe, in main pipe line.



Method of lining up for P.C. foundations.

Note: In locating P.C. foundations, crank and bolt lock foundations must be determined upon first in order that P.C. foundations may be so spaced as to not interfere with them. Field side ends of P.C. foundations must be in perfect line throughout the pipe line. All cranks, compensators and deflecting bars shall be so located as to leave feild side clear.

Note:-
For location of pipe line and P.C. foundations see draw. #A-84

A. G. L. R. R.

Std. method of lining up for P.C. foundations.

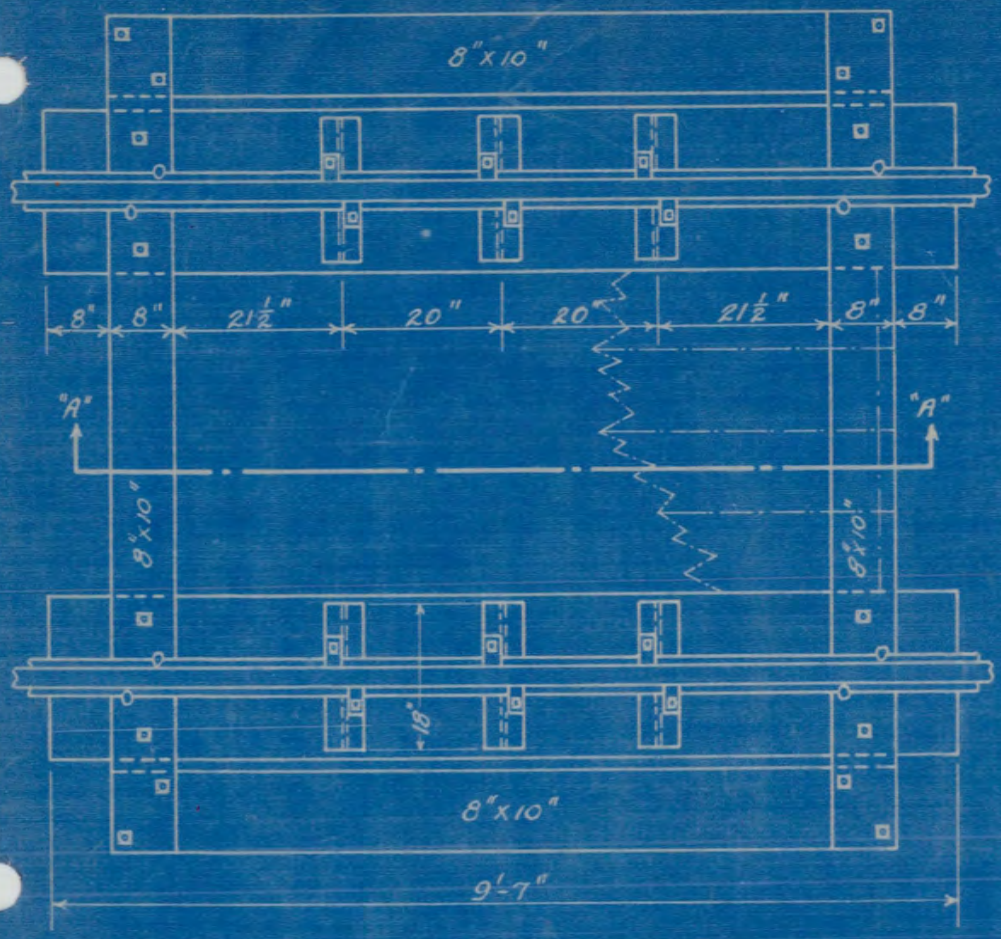
No scale.

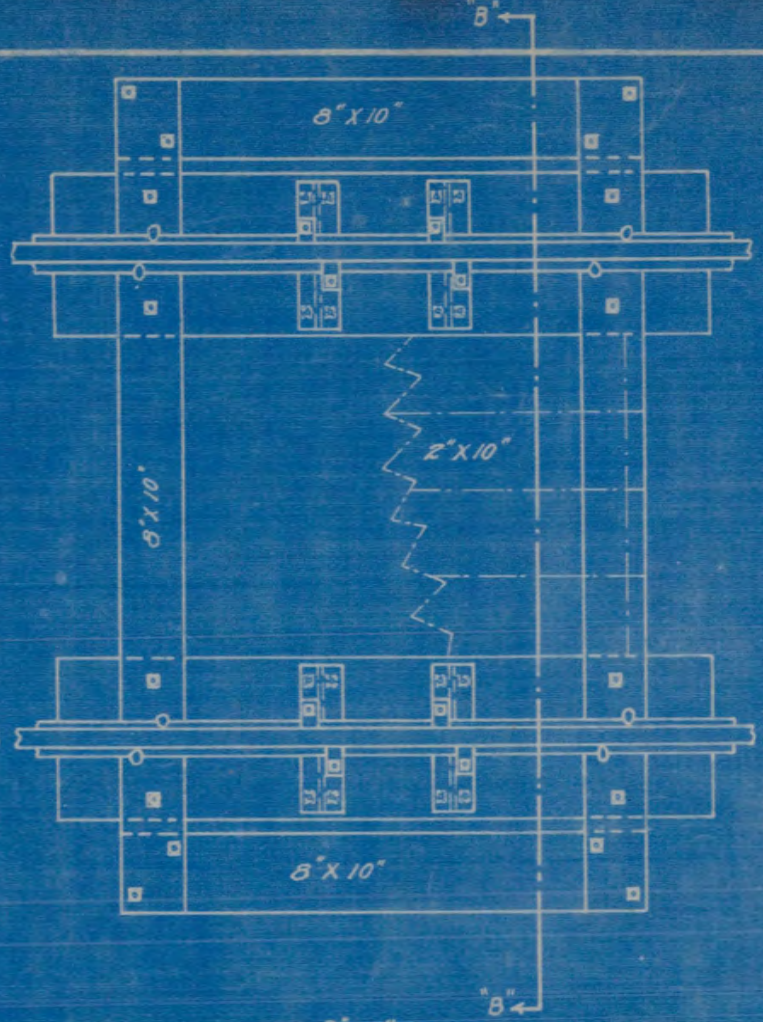
Office of Signal Engr. Wilmington, N.C.

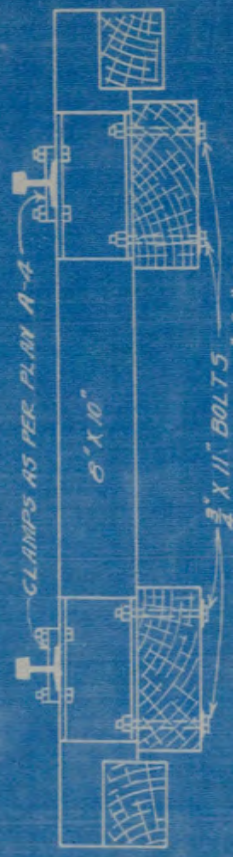
Approved Correct

Chief Engr. Signal Engr.

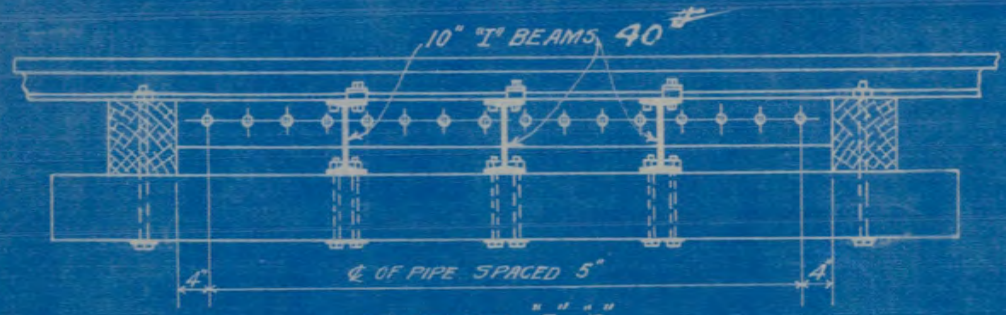
Revised: Distance between foundations was 7'-0" 7-20-27	Revised: Distance from gauge to pipe line was 4'-6" 6-4-27	Drawn C.A.W. Sept. 10, 1908.	A-83



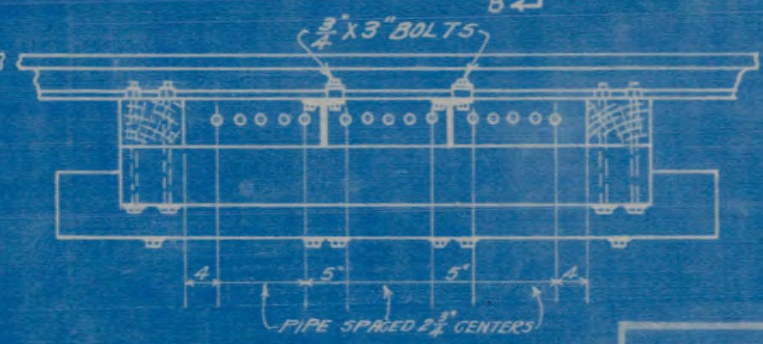


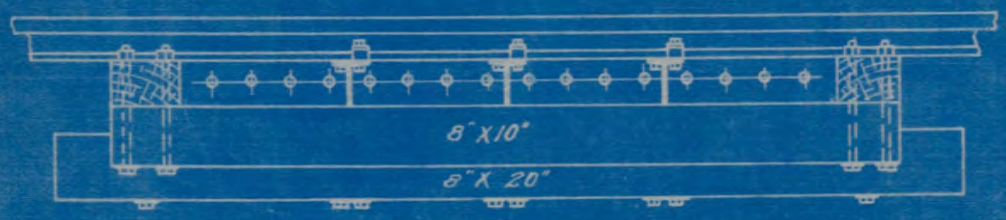


SECTION B-B



SECTION "A"-"A"





METHOD OF FASTENING PLANKING.

A.C.L.R.R.

CROSSLEAD

TRACK SUPPORT FOR INTERLOCKING

Signal Engrs. Office: Wilmington, N.C.

Approved Correct

Chief Engr Signal Engr

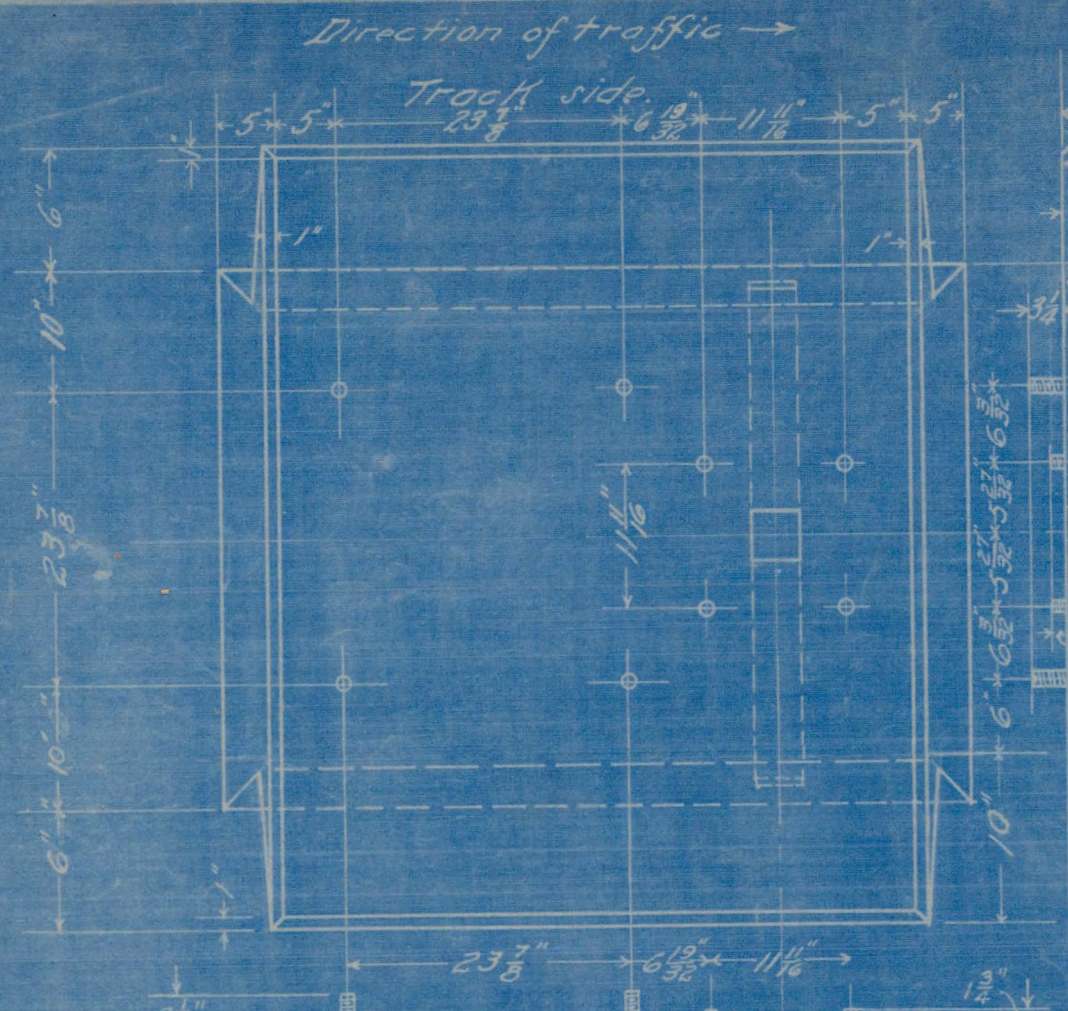
SUPERSEDES A-87 OF 3-17-10.

Drawn E. J. S. 10-3-27

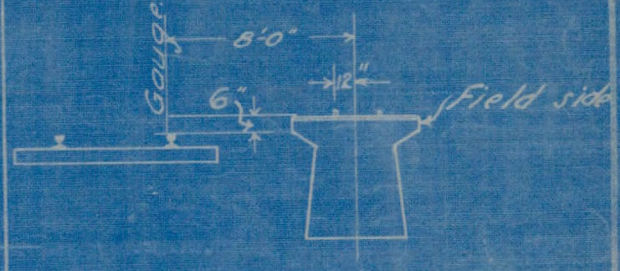
A-87

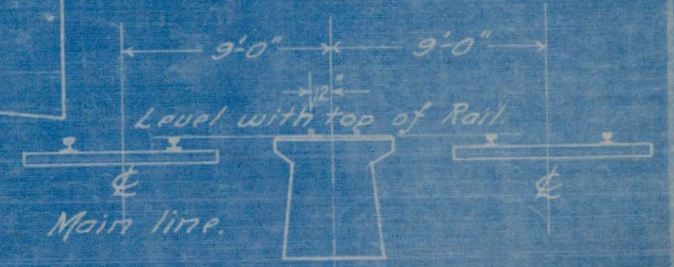
Scale: ½" = 1'-0"

Sheet 1



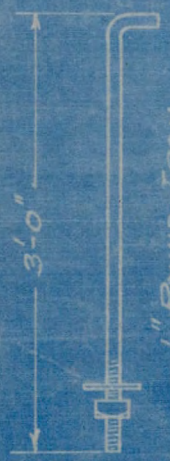
Note: Depth of foundation is for solid ground. Foreman must use his best judgment and increase depth in fills, banks, and doubtful ground.

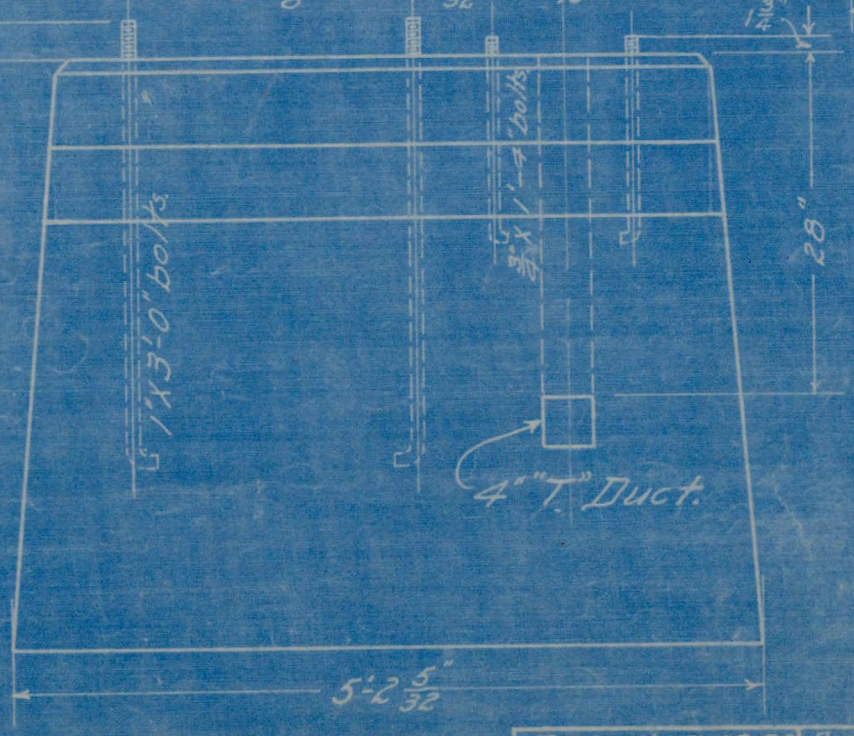




Location of Signal Foundation between tracks.

Note: Track Centers must be 18'-0"
See Sheet 1 for Concrete Specs.





A.C.L.R.R.

Combination
Std. Automatic Signal & Relay
Box Foundation.
For Small Type Sig. Cases.

Signal Engrs. Office Wilmington N.C.

Approved [illegible] Correct

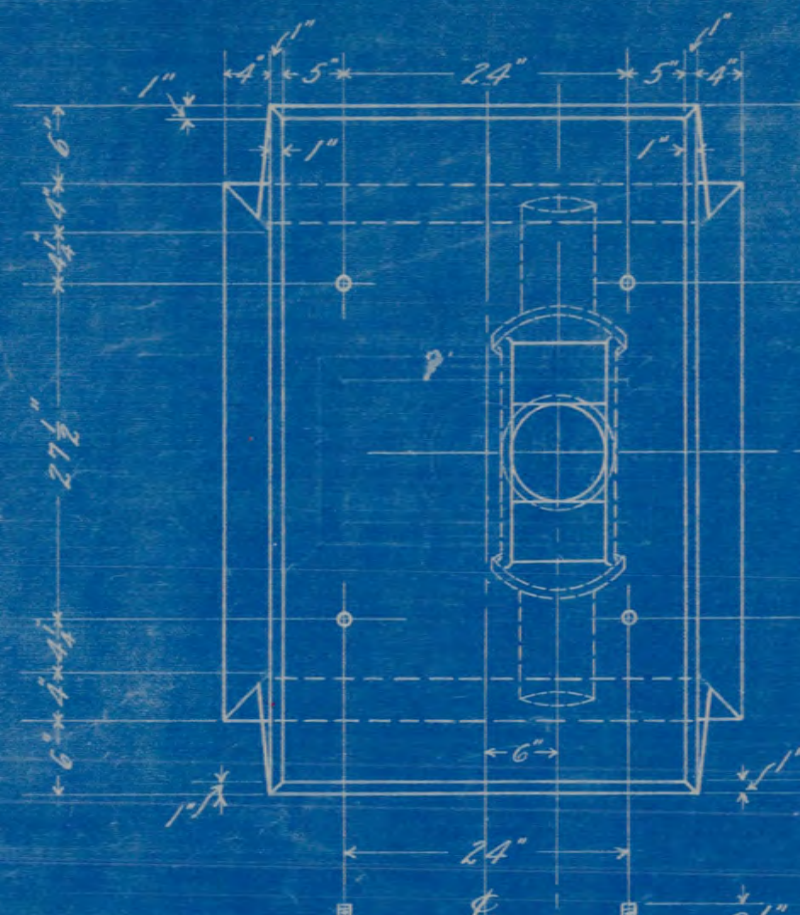
[illegible]
Supt. Signals.

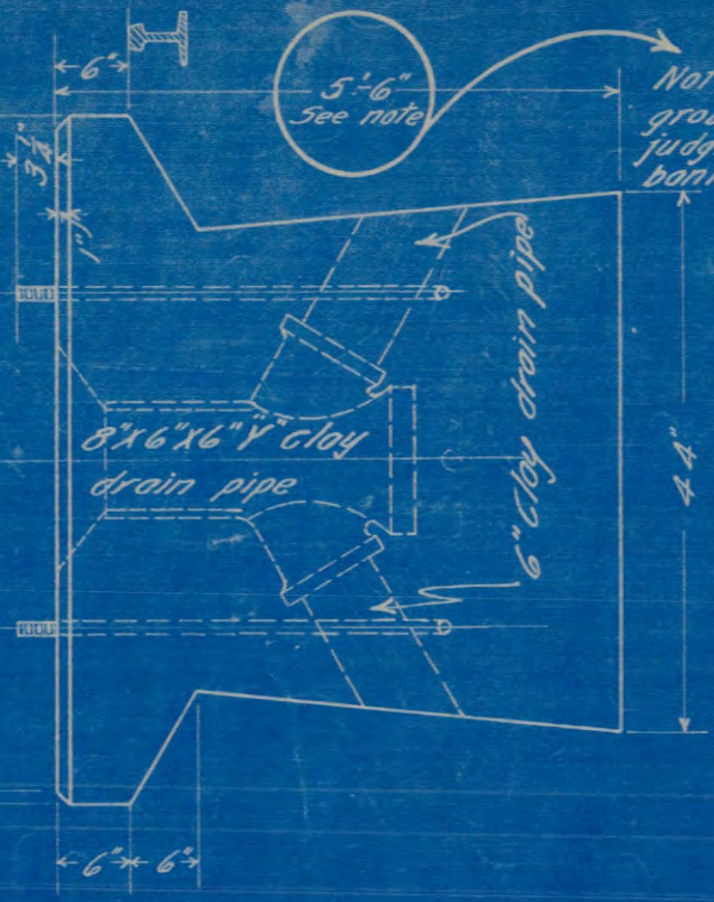
Revised: 8-13-26. 10-2-28.	Revised 10-3-24 3-2-26	Revised Feb. 20. 1924.	Drawn Feb. 12, 1924.		A-88

Scale 3/4" = 12"

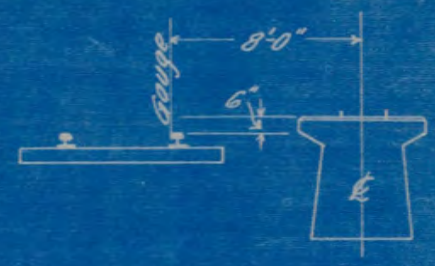
Sheet 3

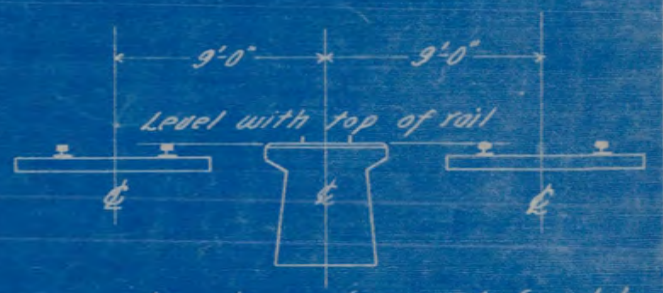
TRACK SIDE





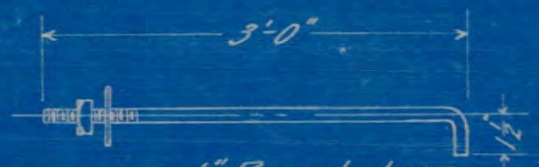
Note: Depth of foundation is for solid ground. Foreman must use his best judgment and increase depth in fills, banks, and all doubtfull ground.





Location of signal foundation between tracks.

Note: Track centers must be 18'-0"
See Sheet 1 for Concrete Specs.



1" Round Iron. Sq. nut, washer and 3" of thread. To be hot galv. 8" on threaded end.

A.C.L.R.R.

Standard Foundation for Large Type Style "S" Signal Cases.

Signal Engrs. Office: Wilmington, N.C.

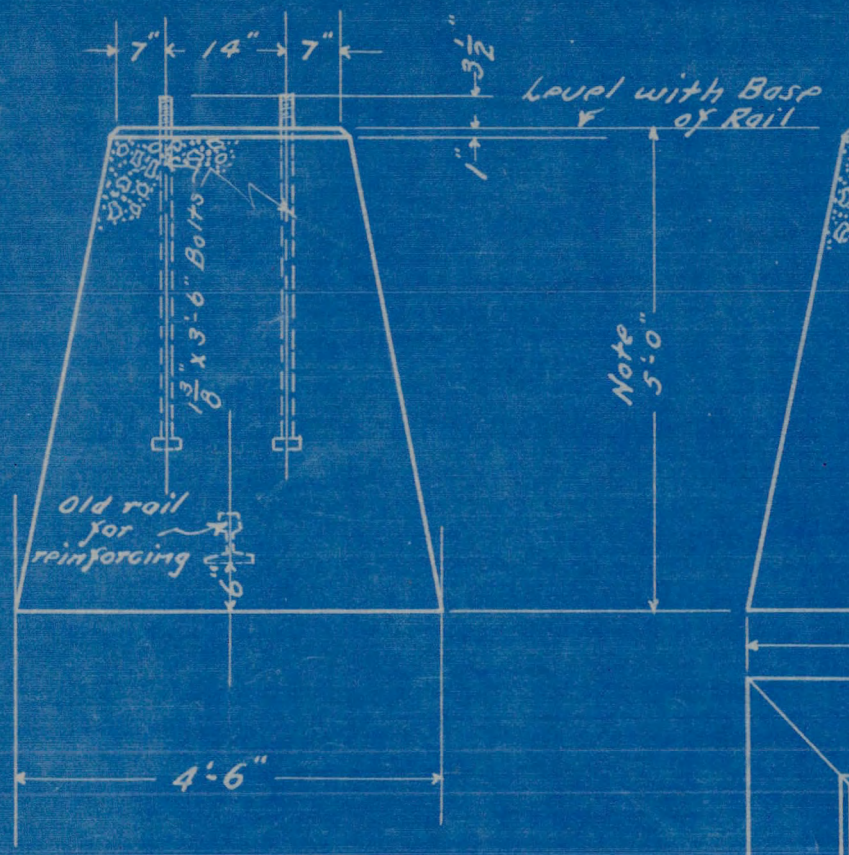
Approved Chief Engr.

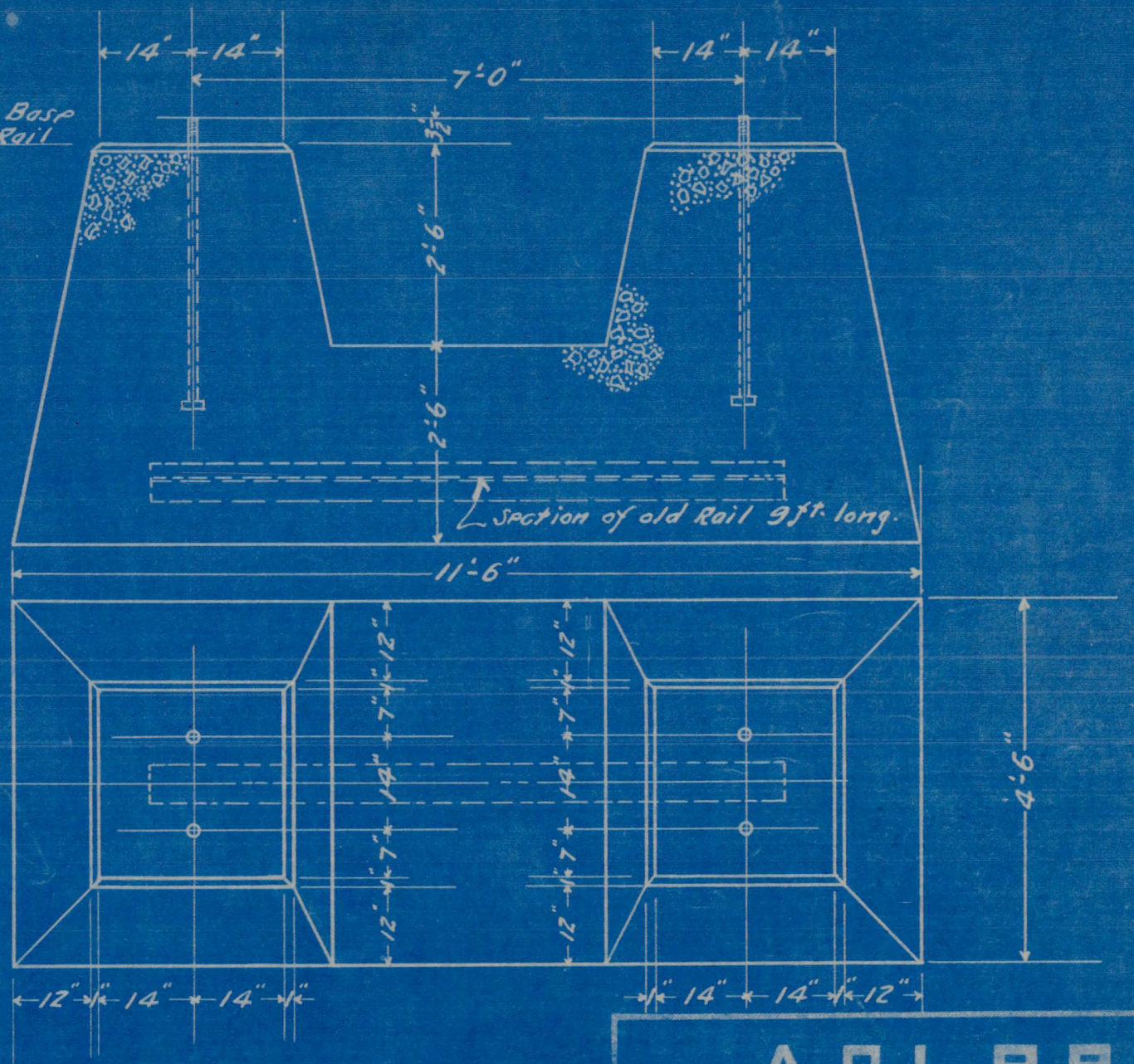
Correct
C. H. Williams
Supt. of Signals.

NOTES FOR TRACK AND FIELD SIDE ADDED 12-31-27.

Scale ¾" - 12" VIEW FROM FIELD SIDE	REVISED 12-9-27. " 10-2-28.	Revised 7-12-26	Revised June 16, 1926	Drawn W.E.H. May 6th, 1926.	A-

Sheet 4





Note:
Depth of foundation is for solid ground. Foreman must use his best judgement for proper depth.
See Sheet 1 for Concrete Specs.

Scale ½" = 12"

A.C.L.R.R.

Std. foundation for Signal bridges.

Signal Engrs. Office: Wilmington, N.C.

Approved: H. Bellanger, Chief Engr.

Correct: A. J. Galloway, Supt. Signals.

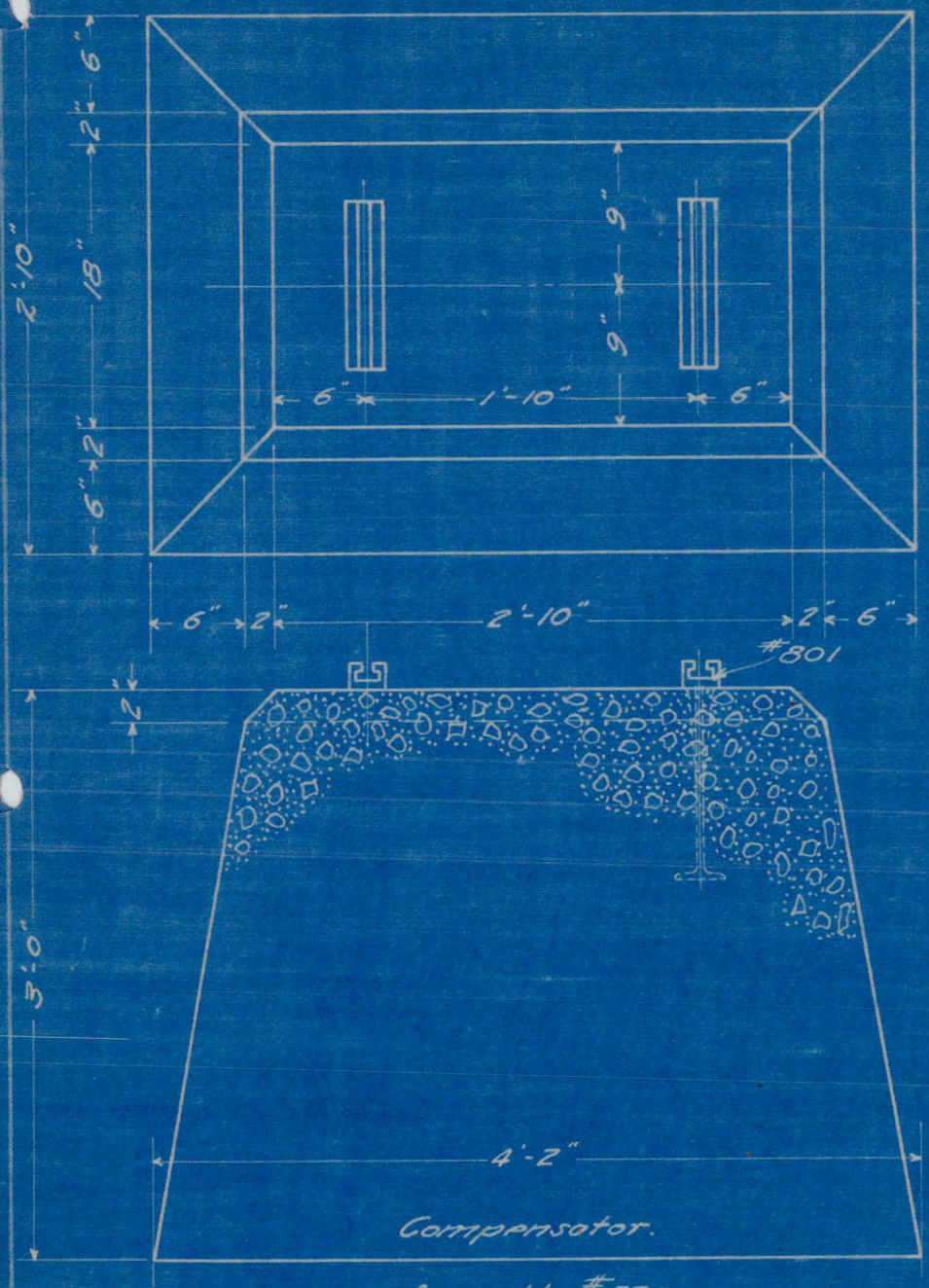
Drawn: Cole, Apr. 7, 1923.

Was A-188 Feb. 9, 1929.

Supersedes F-9 of May 16, 1908.

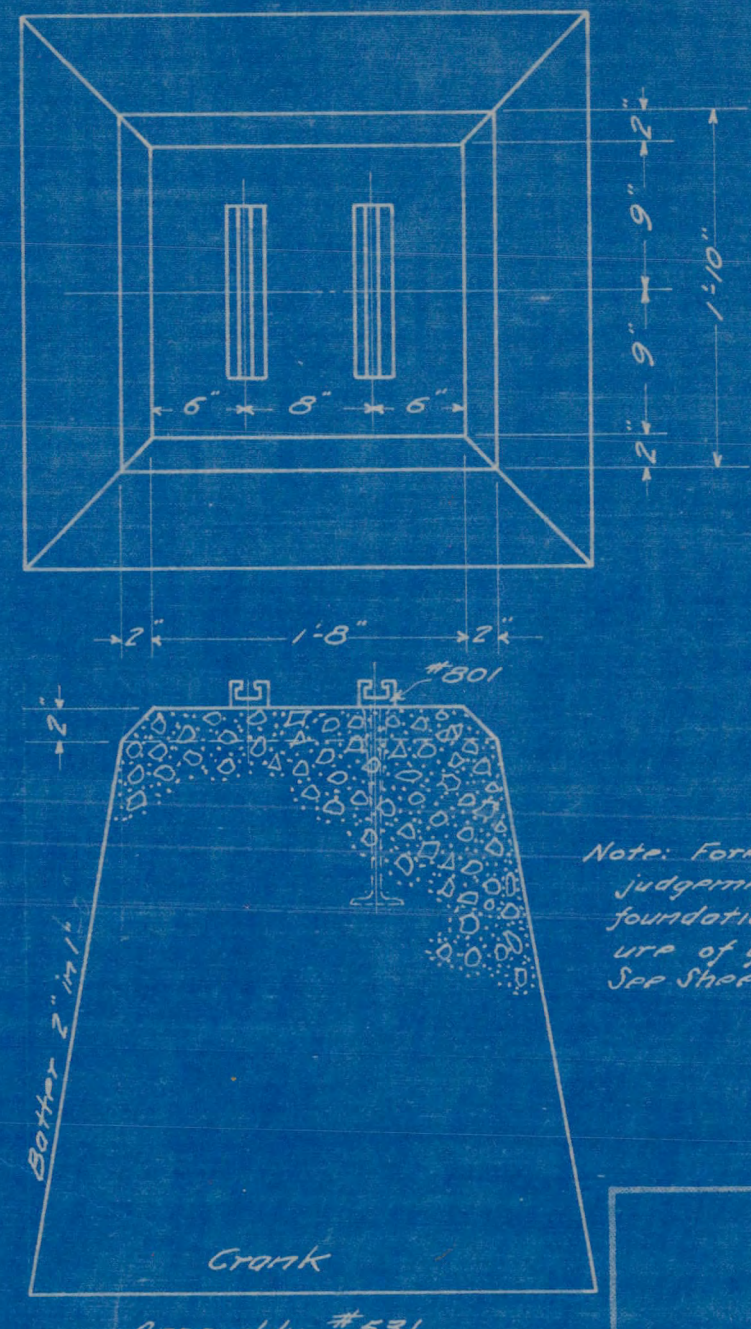
A—88

Sheet 5



Compensotor.

Assembly #530



Crank

Assembly #531

Note: Foremen must use their best judgement as to proper depth of foundations. i.e. to be governed by nature of ground. Fills, banks, etc.
See Sheet 1 for Concrete specifications.

A.C.L.R.R.

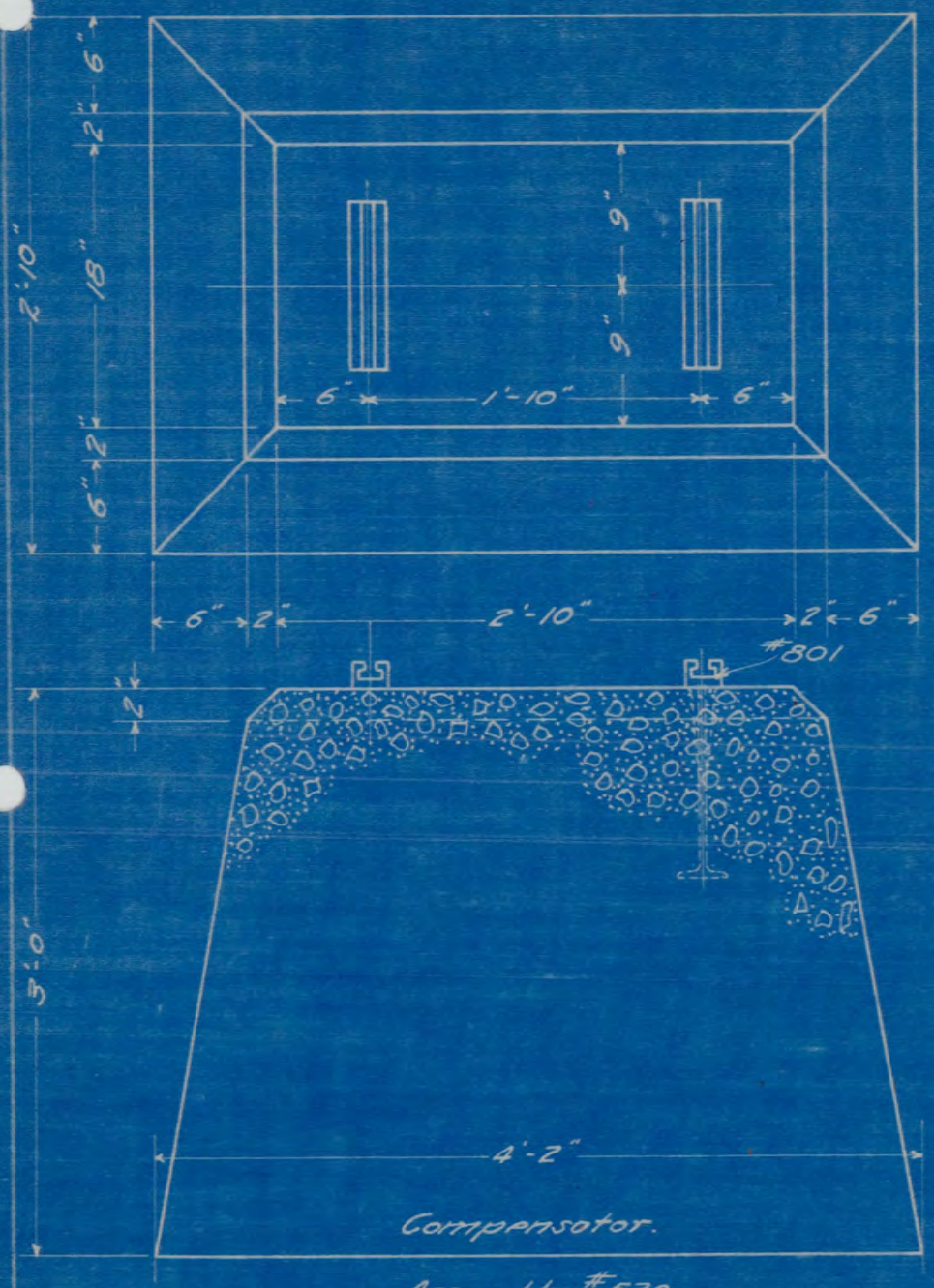
Std. concrete foundations for Compensators and cranks.

Signal Engrs. Office Wilmington N.C.
Approved Correct

Chief Engr. Signal Engr

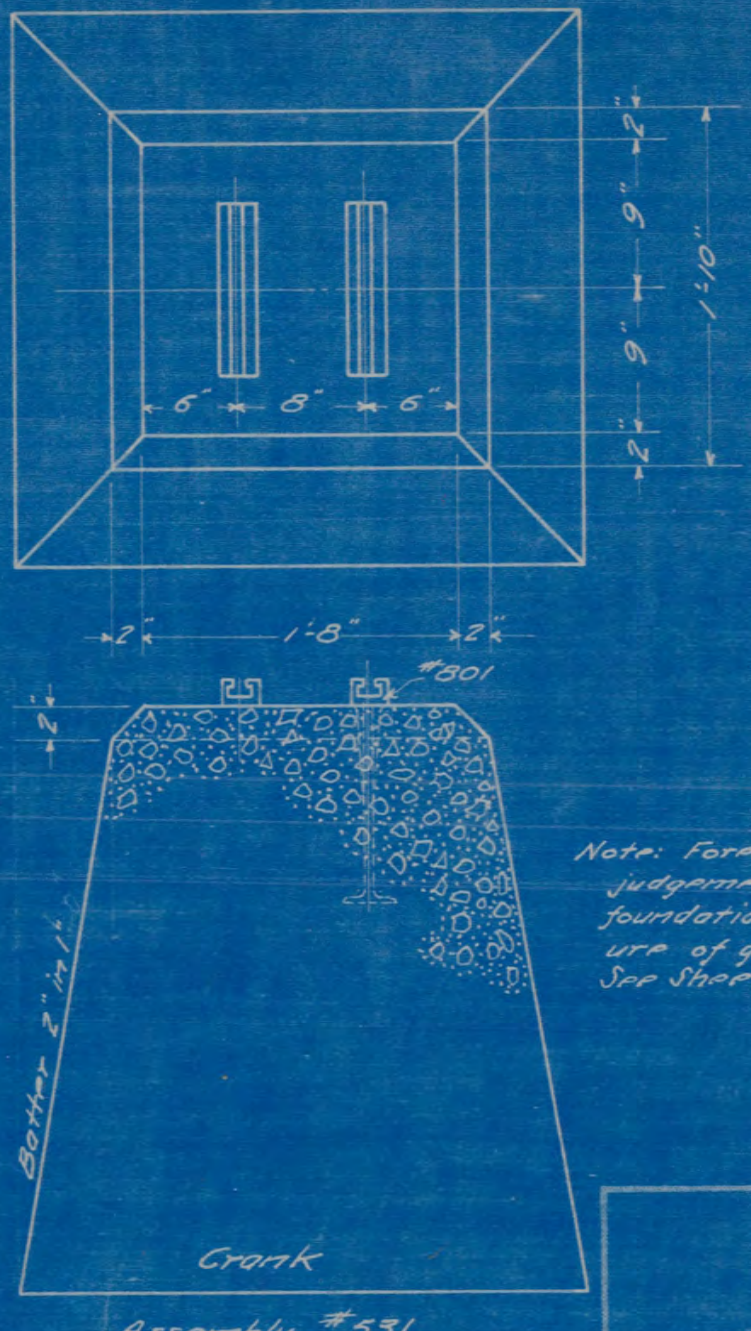
Scale 1" = 12"		Was A-53 Feb. 8, 1929.	Supersedes A-53 of Aug. 12, 1908.	Drawn July 12, 1917.	A

Sheet 7



Compensator.

Assembly #530



Crank

Assembly #531

Note: Foremen must use their best judgement as to proper depth of foundations. i.e. to be governed by nature of ground. Fills, banks, etc.
See Sheet 1 for Concrete specifications.

A.C.L.R.R.

Std. concrete foundations for Compensators and cranks.

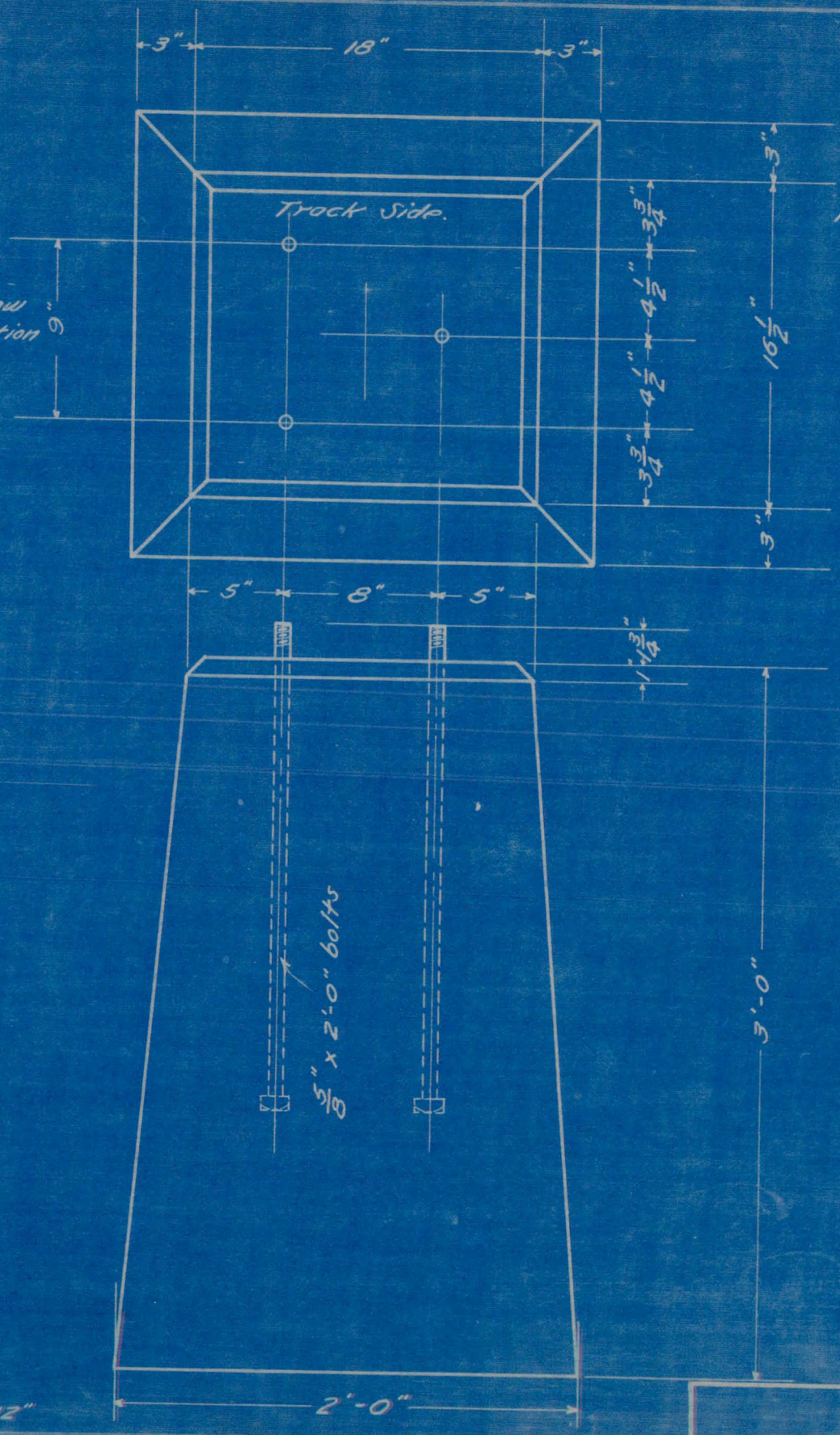
Signal Engrs. Office Wilmington N.C.

Approved Correct

Chief Engr. Signal Engr.

Scale 1" = 12"		Was A-53 Feb. 8, 1929.	Supersedes A-53 of Aug. 12, 1908.	Drawn July 12, 1917.	A — 88

Sheet 7



Note: Top of foundation to set level with top of rail.
Side of foundation measureing 18" on top, to face track. (Marked "Track Side")
See Sheet 1 for Concrete specifications.

Scale: 1 1/2" = 12"

A.C.L.R.R.

Std. concrete foundation for G.R.S. Co's. 2A dwarf signals.

Signal Engrs. Office: Wilmington, N.C.

Approved: Chief Engr.

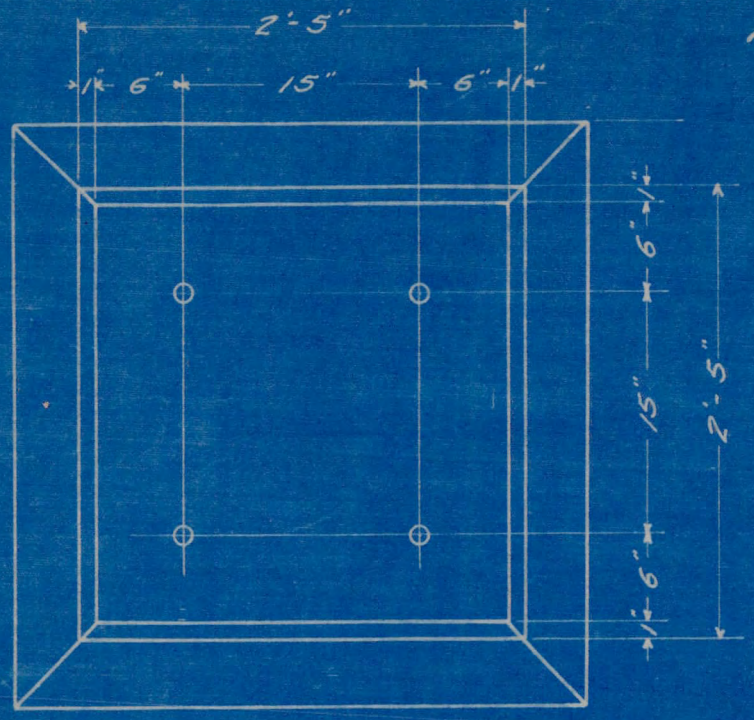
Correct: Signal Engr.

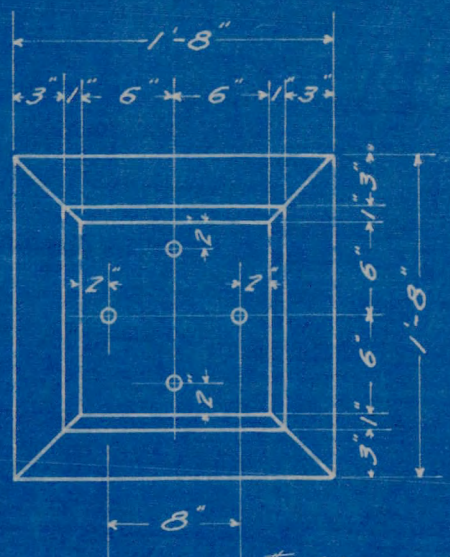
Was A-11 Feb. 8, 1929.

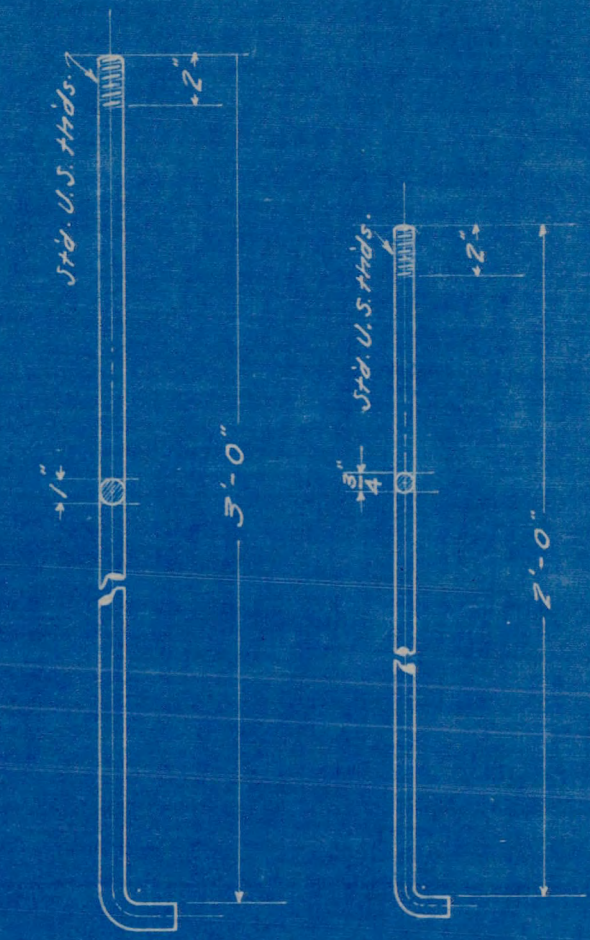
Drawn: April 5, 1915.

A-88

Note: Foundation depths shown are for solid ground and foreman must use judgement and increase depth in fills, banks and any doubtful ground. See Sheet 1 for Concrete Specifications.

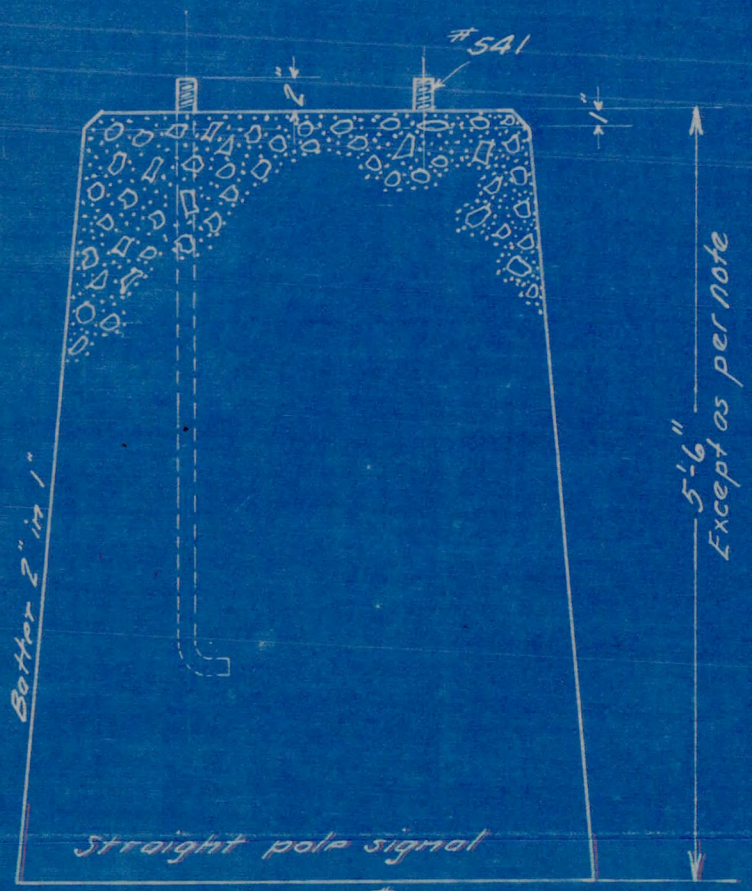




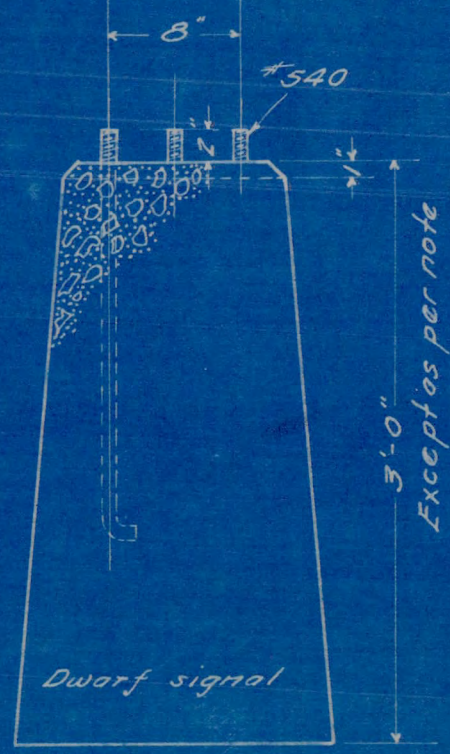


Anchor bolt. #541

Anchor bolt. #540



Assembly #543



Assembly #542

Scale 1" = 12"

A.C.L.R.R.

Std. concrete foundations for Straight pole and Dwarf Mechanical Signals.

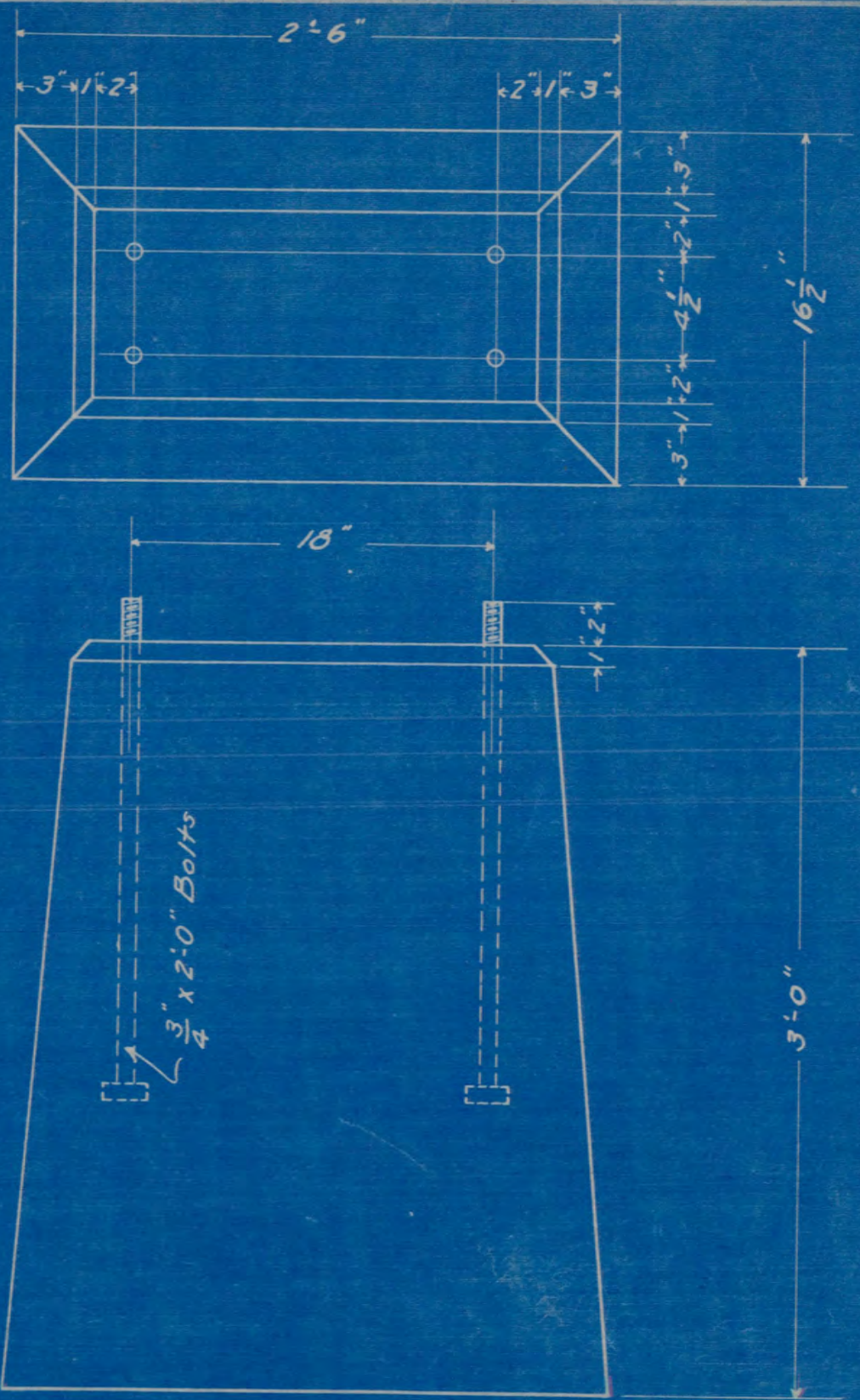
Signal Engrs. Office Wilmington, N.C.

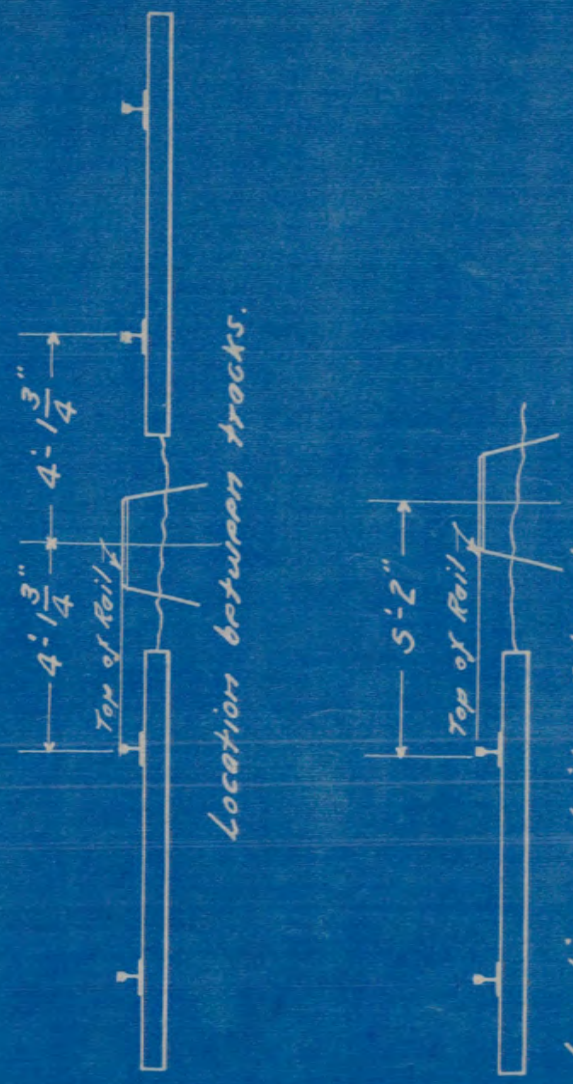
Approved Correct

Chief Engr. Signal Engr.

Was A-54 Feb. 8, 1929.	Supersedes A-54 of Oct. 1, 1910.	Drawn July 12, 1917.		A—88

Sheet 9





See Sheet 1 for Concrete Specs.

A.C.L.R.R.

Std. foundation for U.S. & S. Company Style T Dwarf Signal.

Signal Engrs. Office Wilmington, N.C.

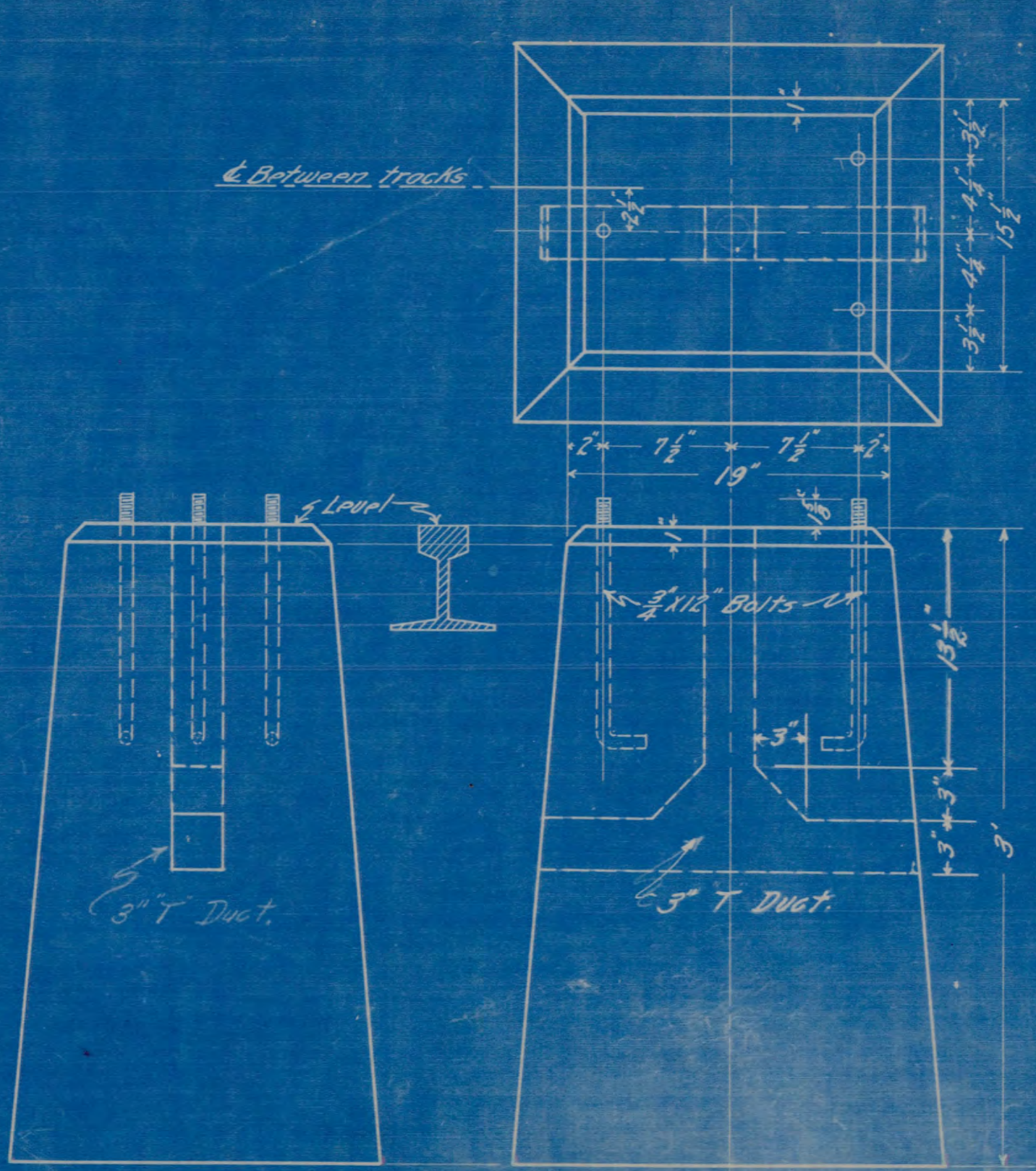
Approved _____ Correct _____

_____ Chief Engr. _____ Supt. Signals.

Scale:

	Was A-115 Feb. 8, 1929.	Drawn Feb. 27, 1923.	A-88

Vol. 8.54 cu. ft.



See Sheet 1 for Concrete Specl.

A.C.L.R.R.

Foundation for "E.P." Style "C" Dwarf Signal

Signal Engrs. Office Wilmington, N.C.

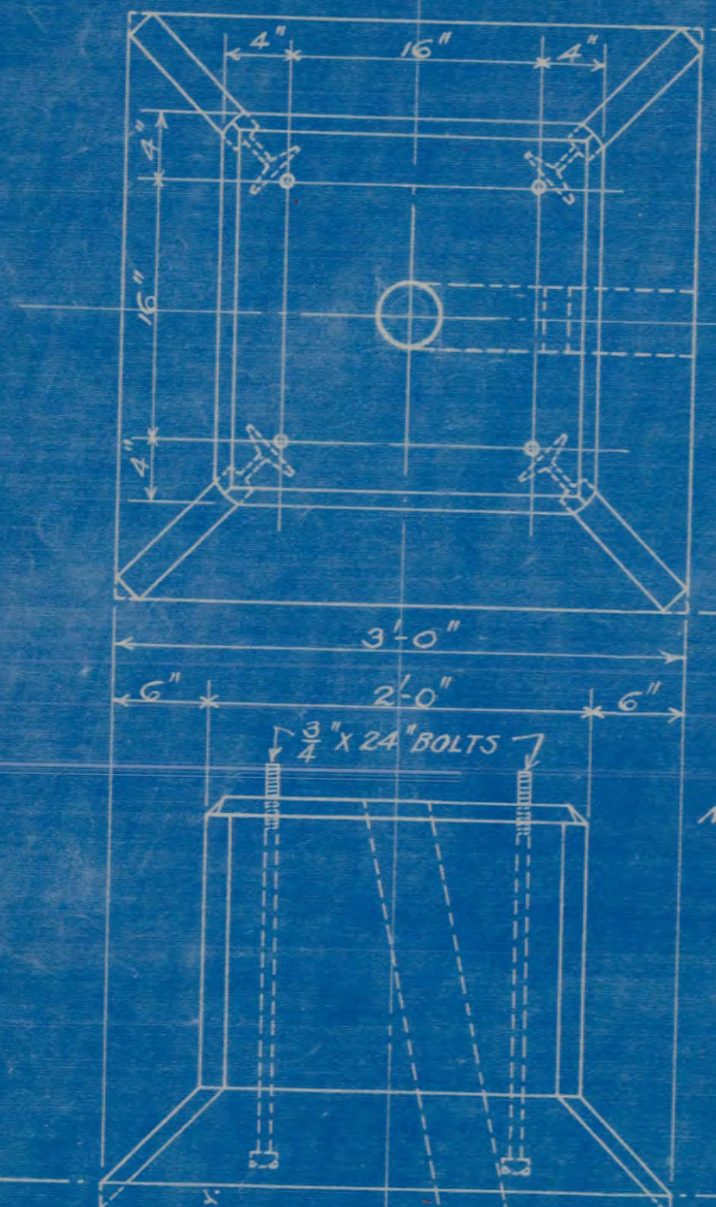
Approved Chief Engr.

Correct
C. H. Williams
Supt. of Signals.

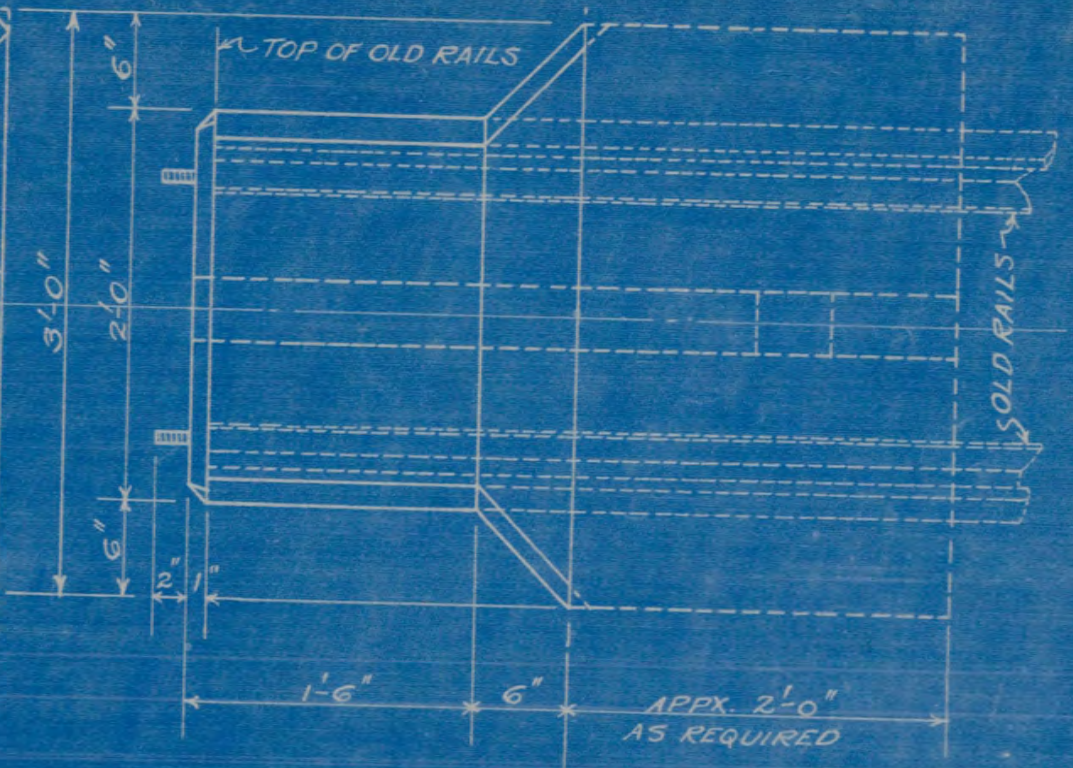
Scale 1½"-1'-0"

	W.O.s A-1206 Feb. 8, 1929.	Drawn W.E.H. April 7th 1926.		A—88

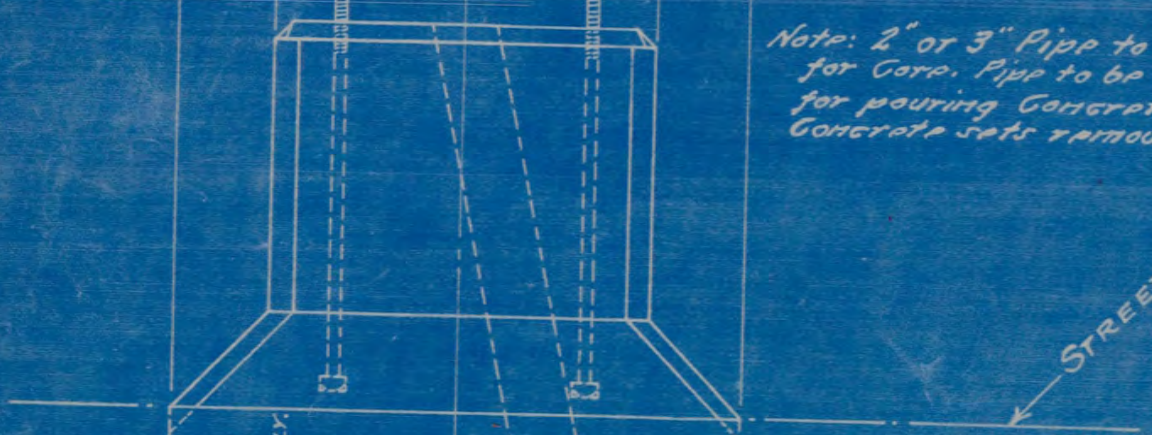
Sheet 11



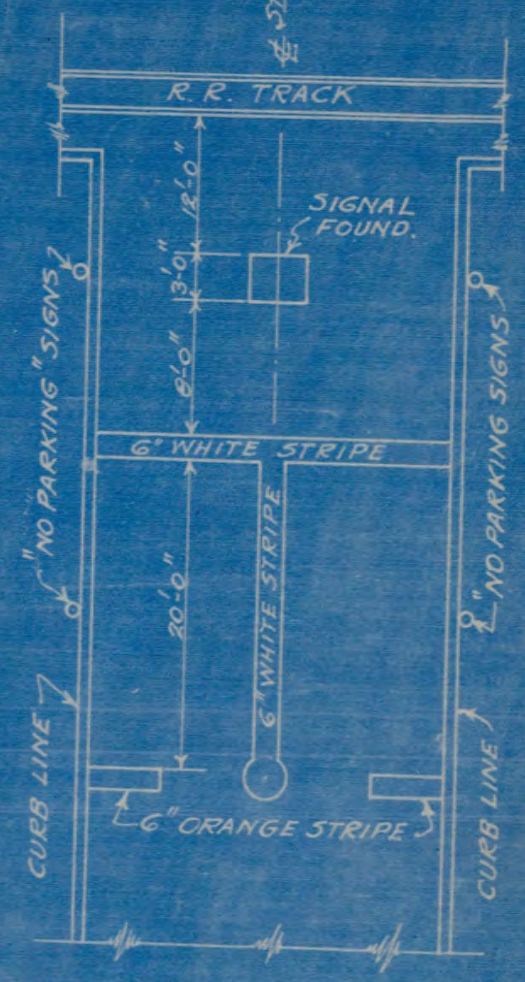
Scale: 1"-1'-0"



Note: 2" or 3" Pipe to be used for Core. Pipe to be oiled before pouring Concrete. When Concrete sets remove pipe.



See Sheet 1 for Concrete specifications.



LOCATION OF TRAFFIC SIGNALS

ADOPTED BY
CITY OF ORLANDO
FLORIDA.

A.C.L.R.R.
FOUNDATION
FOR COLOR-LIGHT TRAFFIC SIGNALS

Signal Engrs Office Wilmington N.C.
Approved
Correct

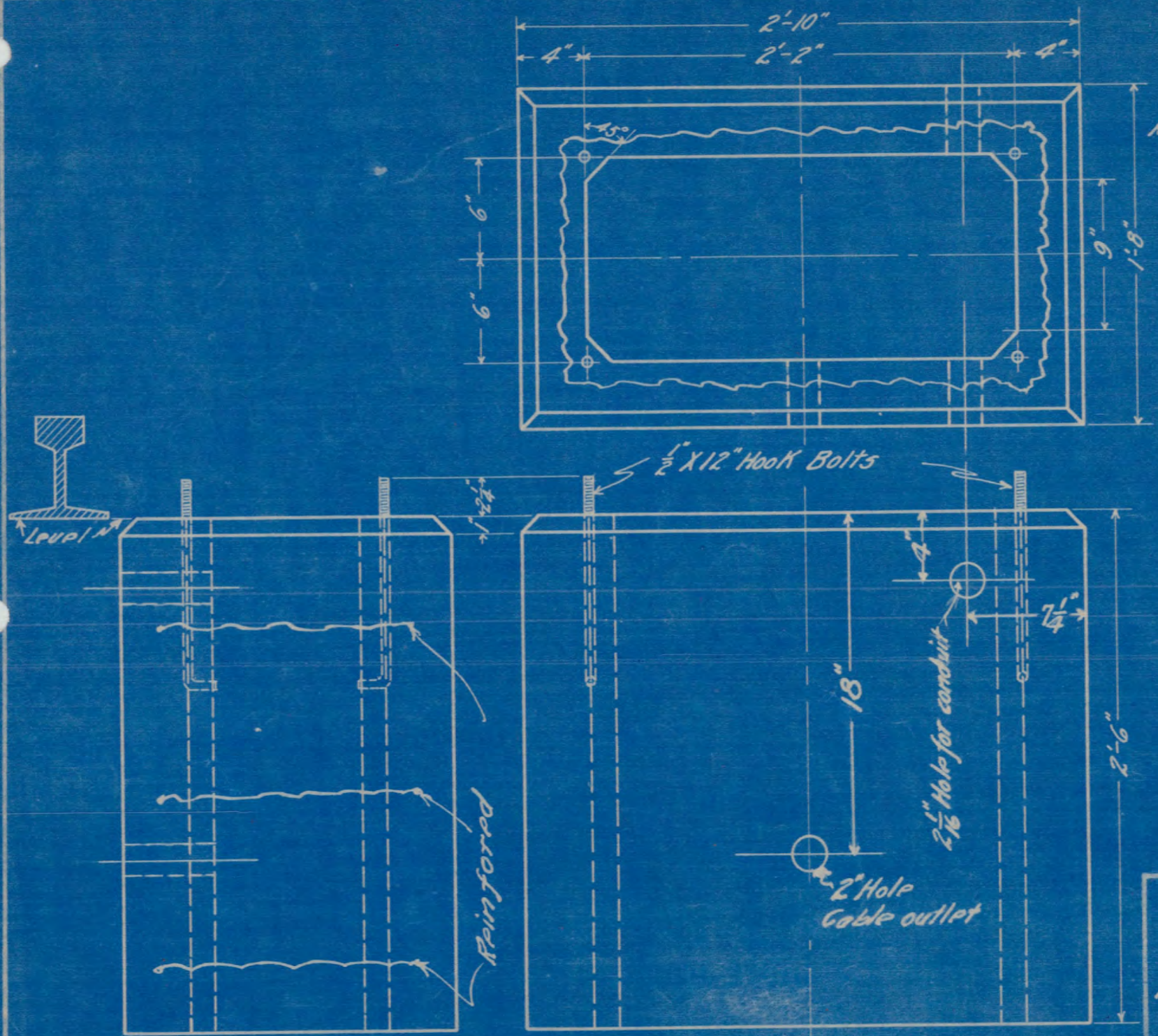
Chief Engr. | Supt of Signals.

WAS A-168

Drawn E.J.S.
DEC. 9. 1926.

A-88

SHEET #2



See sheet 1 for Concrete Specifications.

Scale: 1½" = 1'-0".

A.C.L.R.R.

Foundation For Type "C" Valve "E.P."

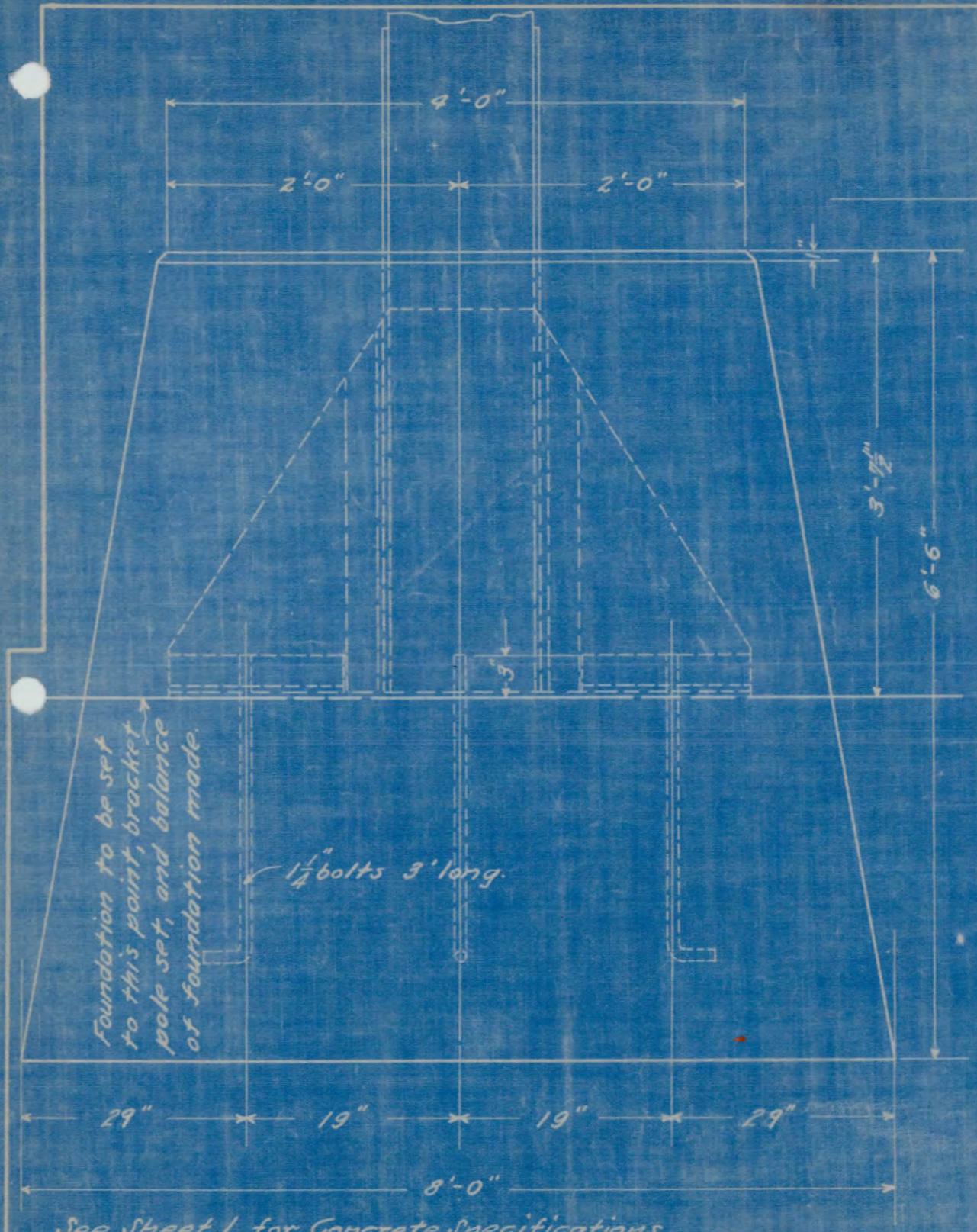
Signal Engrs. Office: Wilmington, N.C.

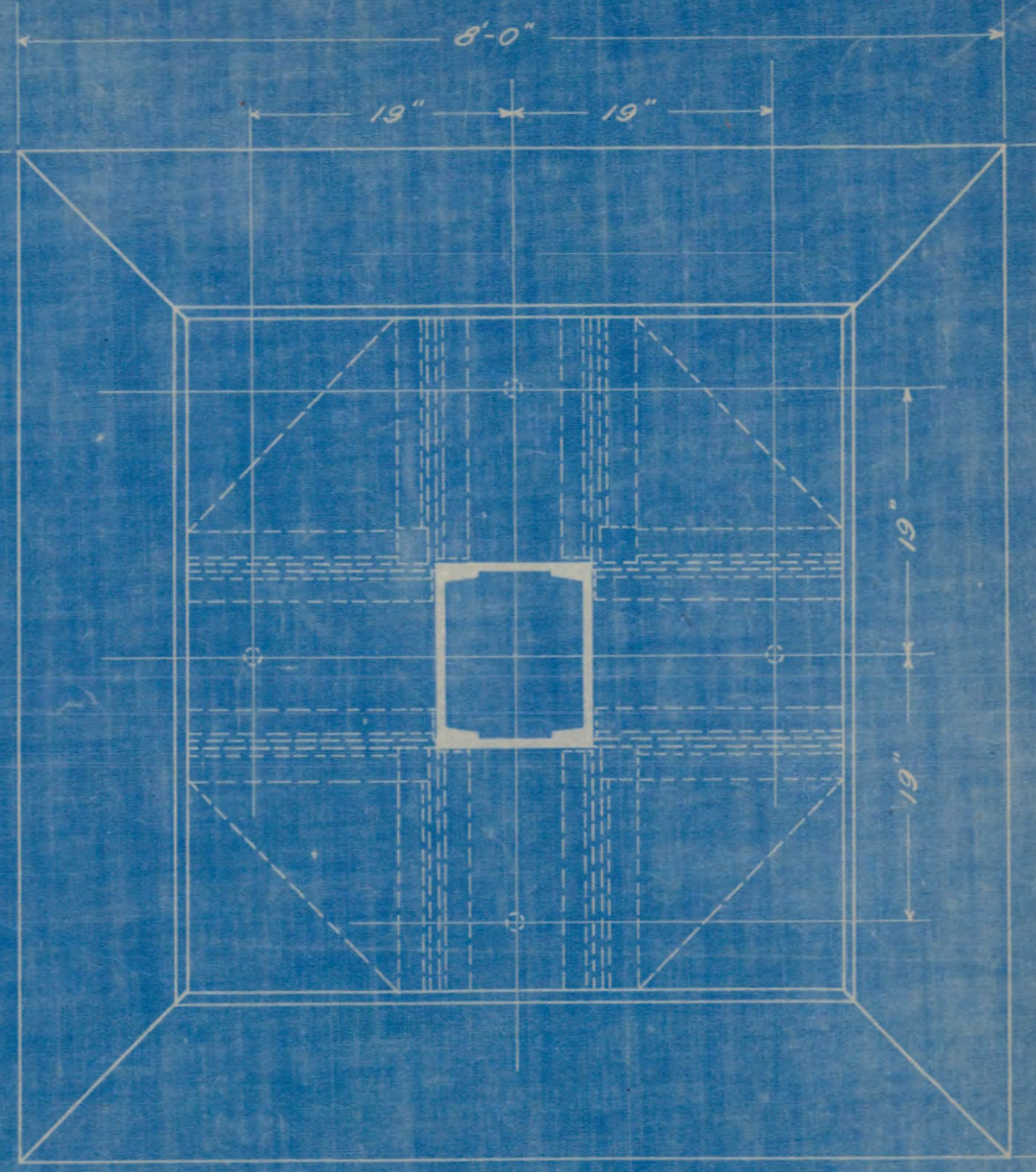
Approved Chief Engr.

Correct C. H. Holloway Supt. of Signals

	Was A-1205 Feb. 8, 1929.	Drawn W.E.H. April 7th 1926.	A-88

Sheet 13





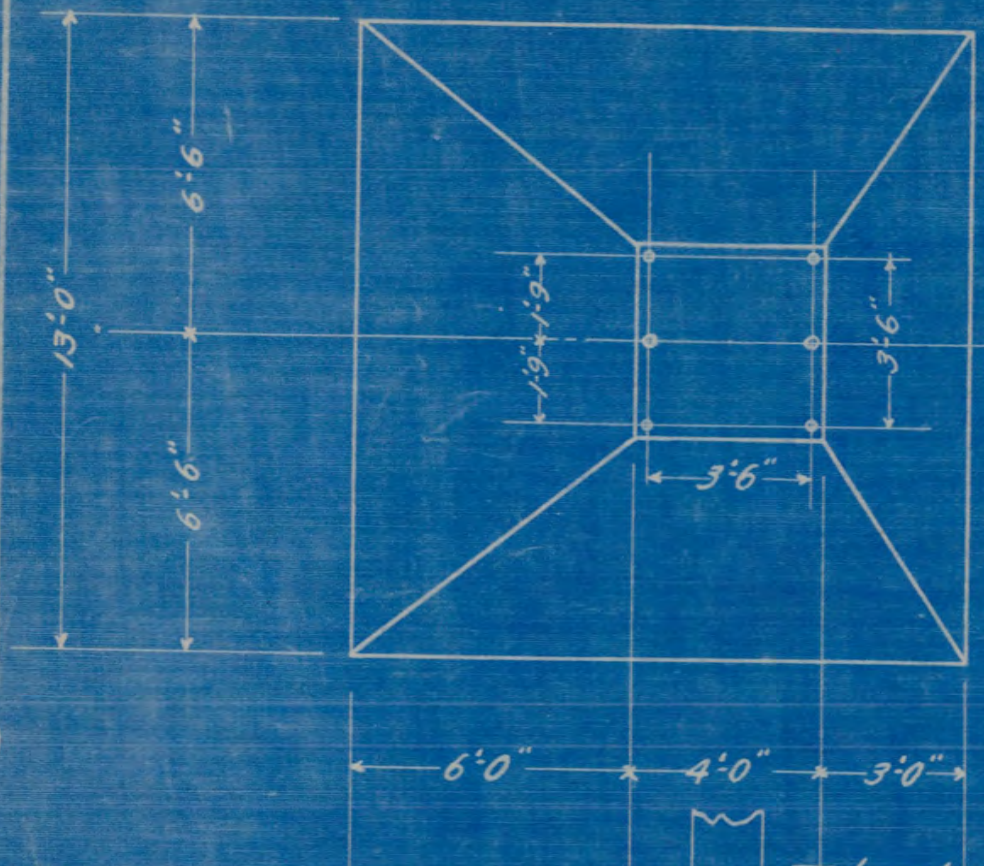
See Sheet 1 for Concrete Specifications.

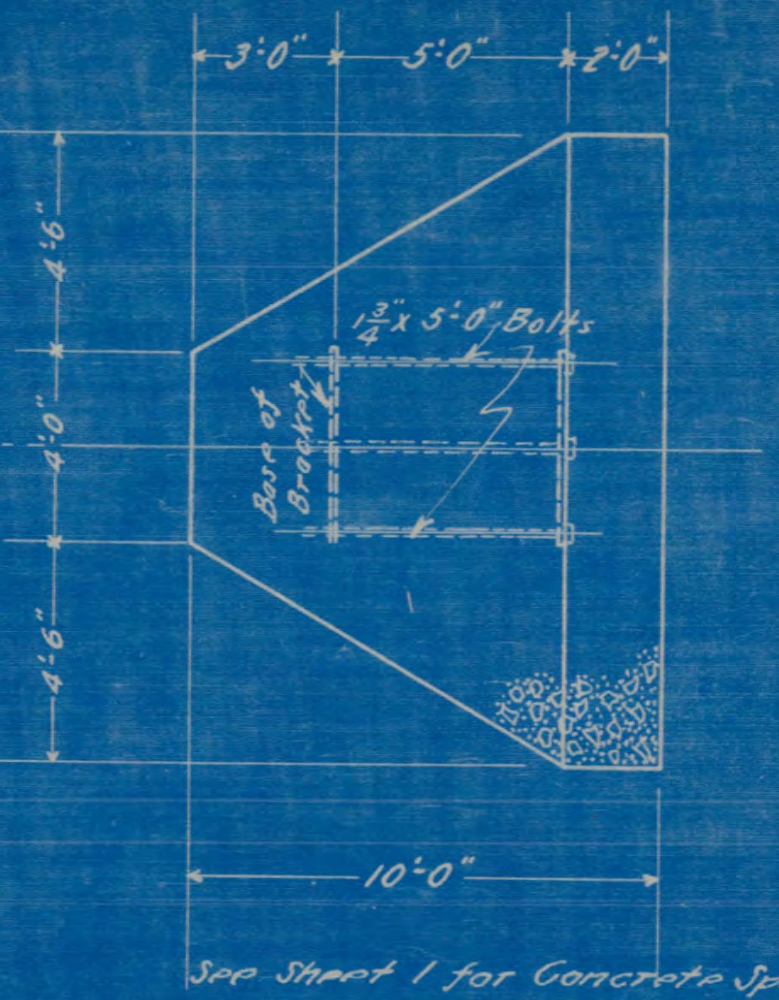
Note: For Cantilever Bracket see C-54 & 55

Atlantic Coast Line RR.
Std. foundation for cantilever Bracket.
Signal Eng'rs. Office: Wilmington, N. C.
Approved Correct
C J Lowry
Chief Eng'r. Signal Eng'r.

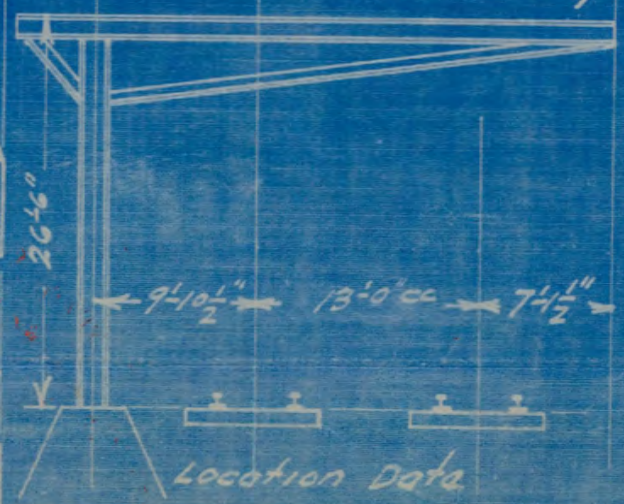
Scale: 1" = 12"		Was A-134 Feb. 8, 1929.	Revised dimensions 6-20-27.	Revised 11-9-26.	DRAWN Nov. 20, 1912. A-86

Sheet 14





Note: If not solid ground, it will be necessary to drive 4 foundation piles.
Set Top of foundation level with Base of Rail. For contilever drawing see F-10.



See Sheet 1 for Concrete Specifications.

A.C.L.R.R.

Foundation for 2 track Cantilever bracket.

Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr. Supt. Signals.

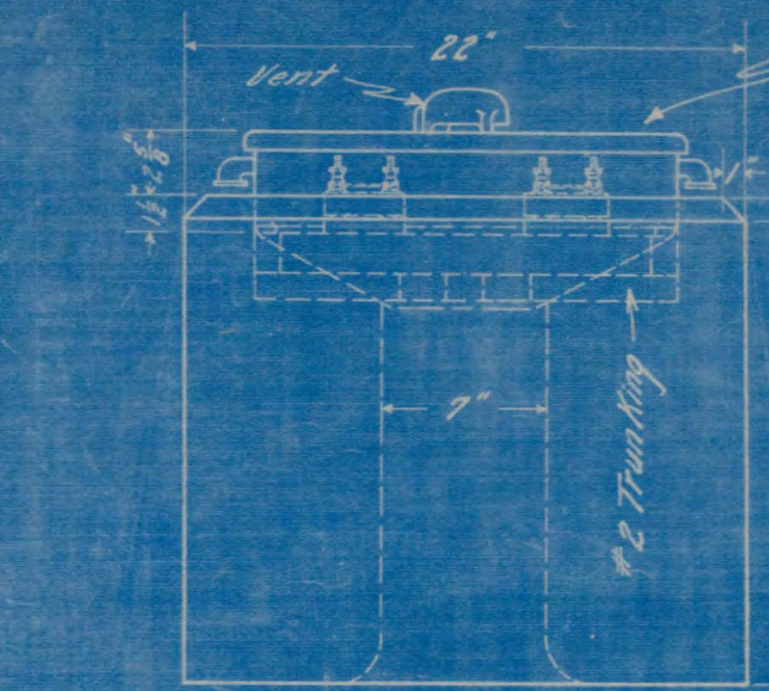
Drawn C.E.W. Apr. 7, 1923.

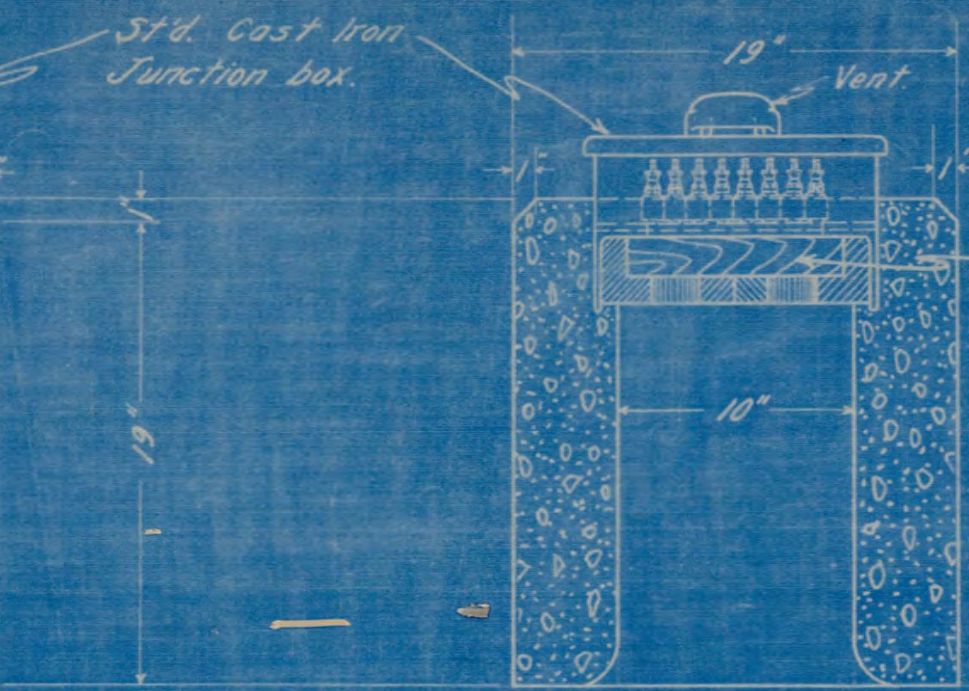
A—88

Scale ¼" = 12"

Was A-189 Feb. 8, 1929.

Revised. 11-9-26.





Note:- Foundation for 10 way box made in proportion. Foundations to be reinforced with old wire.

Holes bored to suit requirements of cable.

#2 Trunking.

Notes:
For cast iron junction box see A-197.
See sheet 1 for concrete specifications

A.C.L.R.R.

Std. 20 Way Junction box foundation for Parkway Cable.

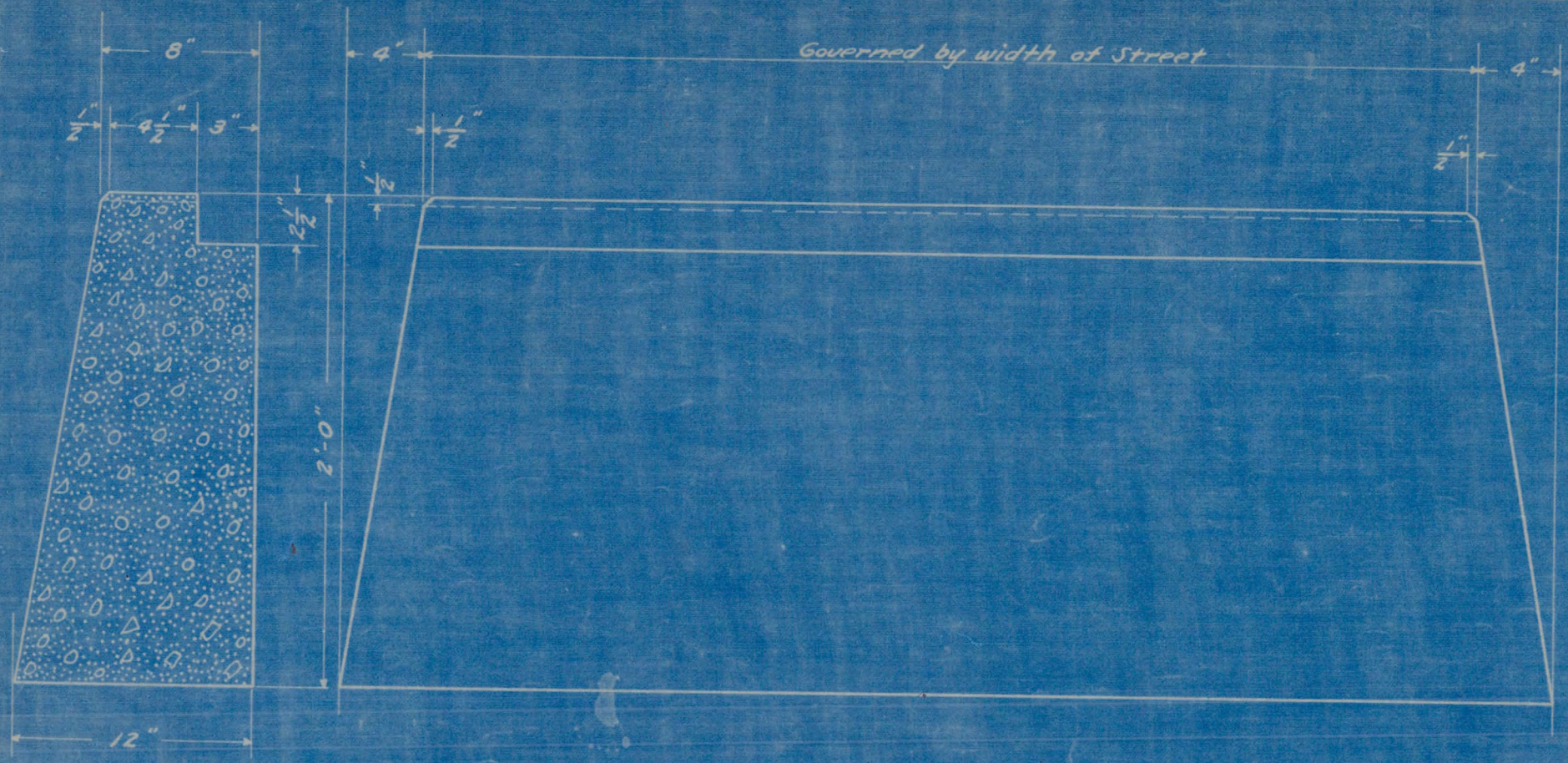
Signal Engrs. Office. Wilmington, N.C.

Approved Correct

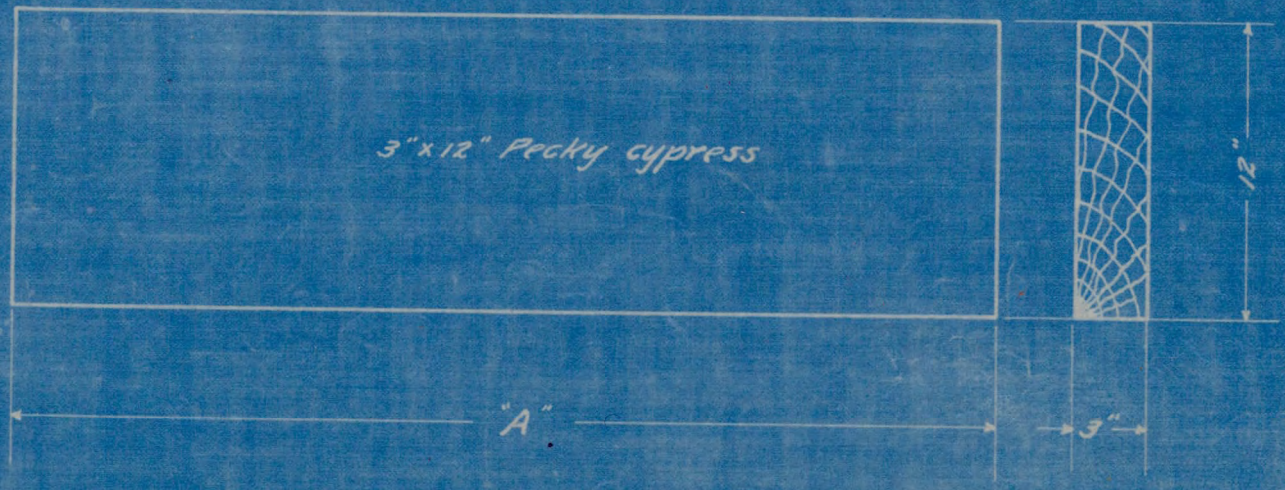
Chief Engr. Signal Engr.

	Was A-197. 2-8-29	Drawn C.A.W. Mar. 30, 1925	Traced W.E.H.	A-⊞⊞

Scale: 1½" = 1'-0"



"A" will be	When P.C. foundation top is
3'-2 1/4"	6 Way
3'-5"	7 "
3'-7 3/4"	8 "
3'-10 1/2"	9 "
4'-1 1/4"	10 "
4'-4"	11 "
4'-6 3/4"	12 "
4'-9 1/2"	13 "
5'-0 1/4"	14 "
5'-3"	15 "
5'-5 3/4"	16 "
5'-8 1/2"	17 "
5'-11 1/4"	18 "
6'-2"	19 "



See A-74 Sh. 3

A.C.L.R.R.

Std. foundation for Planking of Streets.

Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr. Signal Engr.

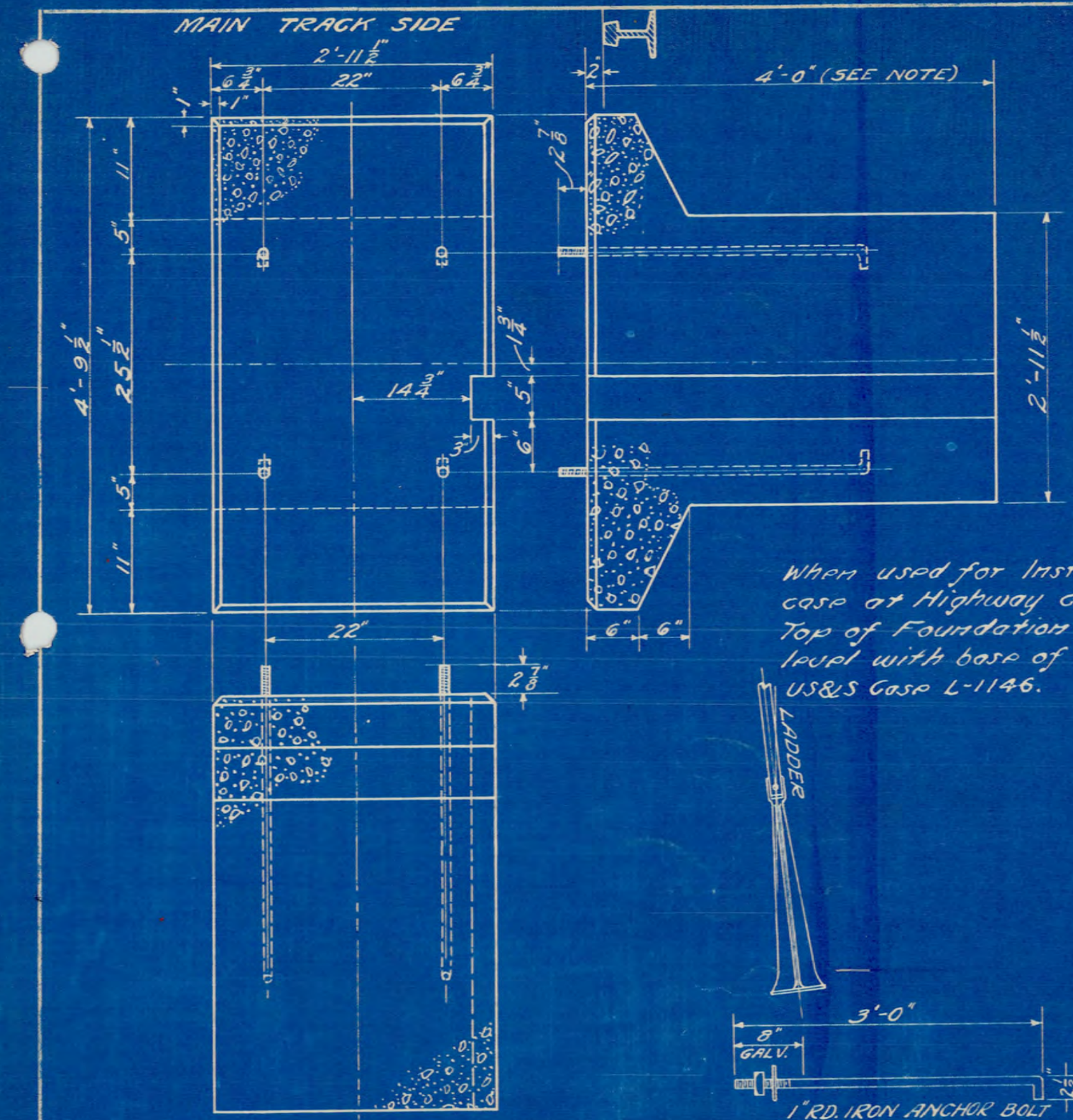
Scale

Was A-75 Mar. 5, 1929.

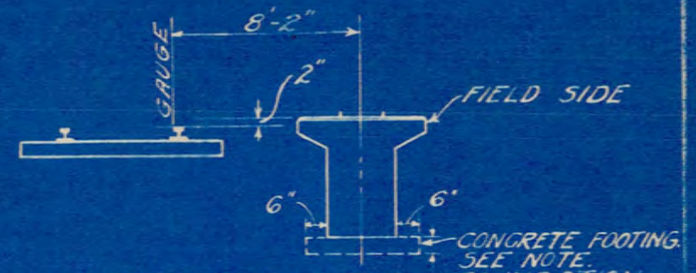
Drawn C.F.L. Oct. 7, 1912.

A — 88

Sheet 17

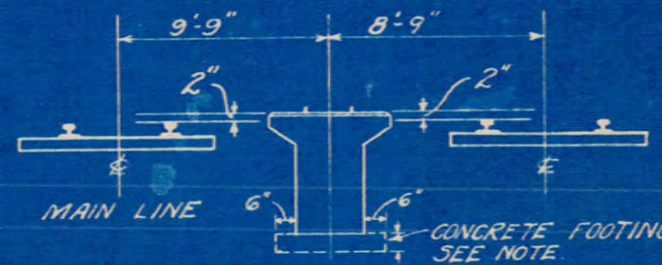


NOTE:-
DEPTH OF CONCRETE FOOTING IS 5" FOR SOLID GROUND. FOREMAN MUST USE HIS BEST JUDGMENT AND INCREASE DEPTH IN FILLS, BANKS AND ALL DOUBTFUL GROUND.



LOCATION OF SIGNAL FOUNDATION
NOT BETWEEN TRACKS.

When used for Instrument case at Highway crossings, Top of Foundation to be level with base of rail.
US&S Case L-1146.



LOCATION OF SIGNAL FOUNDATION
BETWEEN TRACKS

1"RD. IRON ANCHOR BOLT
SQ. NUT, WASHER AND 8" OF BOLT TO BE HOT GALVANIZED.

NOTES:-
TRACK CENTERS MUST BE NOT LESS THAN 19'-0".

FOR CONCRETE SPECIFICATIONS SEE SHEET 1.

A. C. L. R. R.

STANDARD FOUNDATION FOR COLOR LIGHT SEARCHLIGHT SIGNALS

Supt. of Signals Office: Wilmington, N. C.

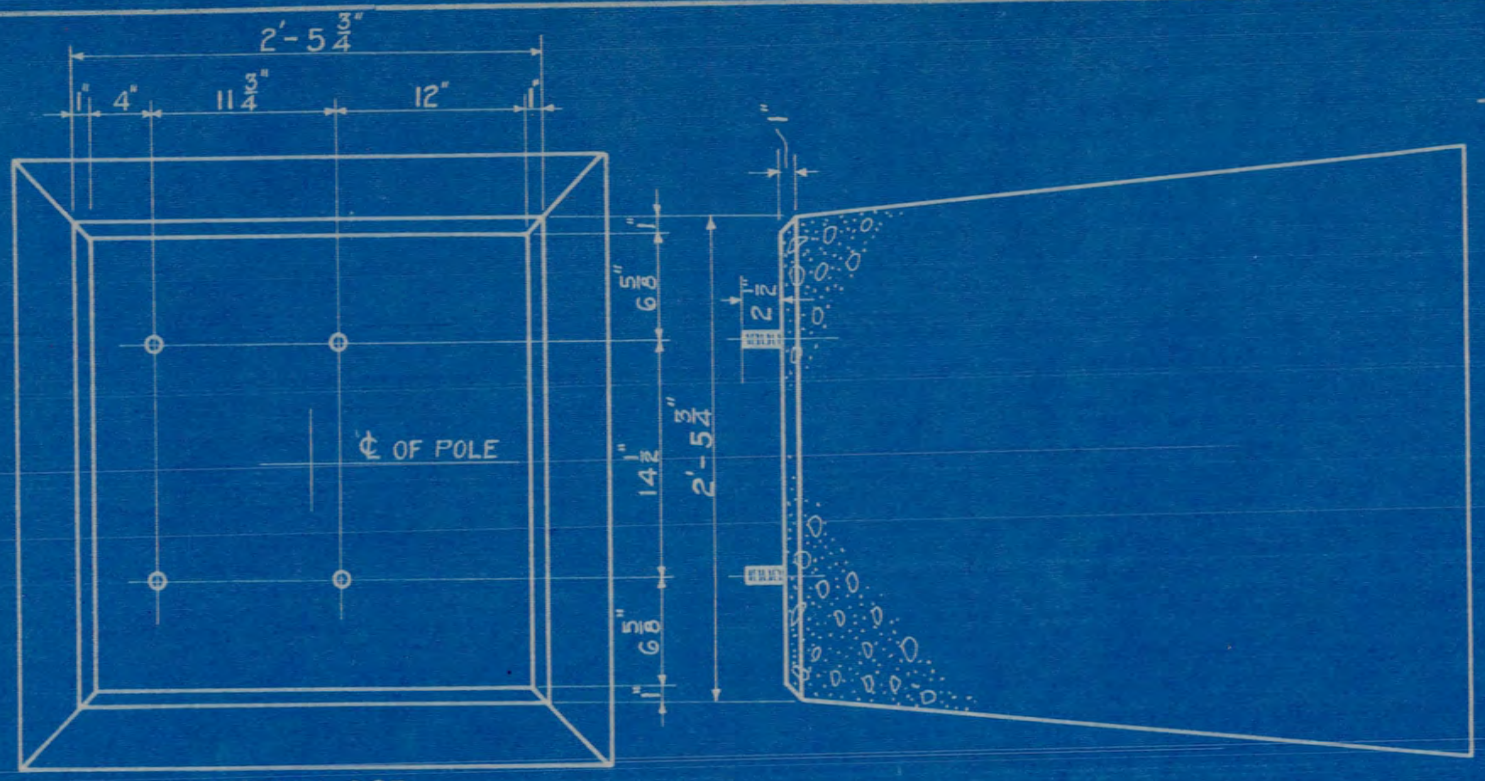
Approved Correct

Chief Eng'r. Supt. of Signals.

Note added. 11-24-33.	REVISED SIZE OF FOUNDATION 11-29-30.	REVISED LOCATION OF FOUNDATIONS 5-26-30.	Drawn W.E.H. APRIL 15, 1930	A-88

Scale: 3/4" = 12"

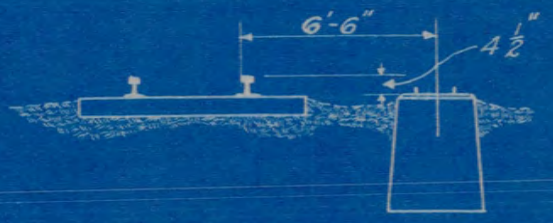
Sheet 18 of ____. ____ Prints

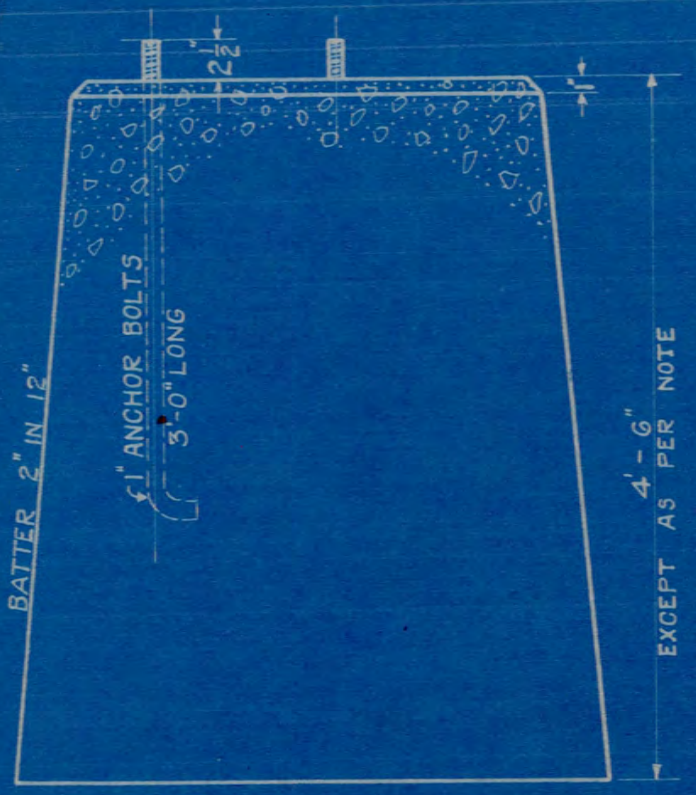


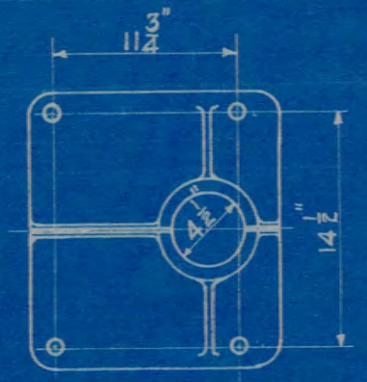
NOTE:

FOUNDATION DEPTH SHOWN IS FOR SOLID GROUND AND FOREMAN MUST USE JUDGEMENT AND INCREASE DEPTH IN FILLS, BANKS, AND ANY DOUBTFUL GROUND.

SEE SHEET 1 FOR CONCRETE SPECIFICATIONS.







BASE CASTING
U.S.&S.CO. PLAN C-3348
PLATE B-33 FIG. 1c & 1d.

A. C. L. R. R.

CONCRETE FOUNDATION FOR MECHANICAL SMASHBOARD SIG.

Supt. of Signals Office: Wilmington, N. C.

Approved *Correct*

Chief Eng'r. *Supt. of Signals.*

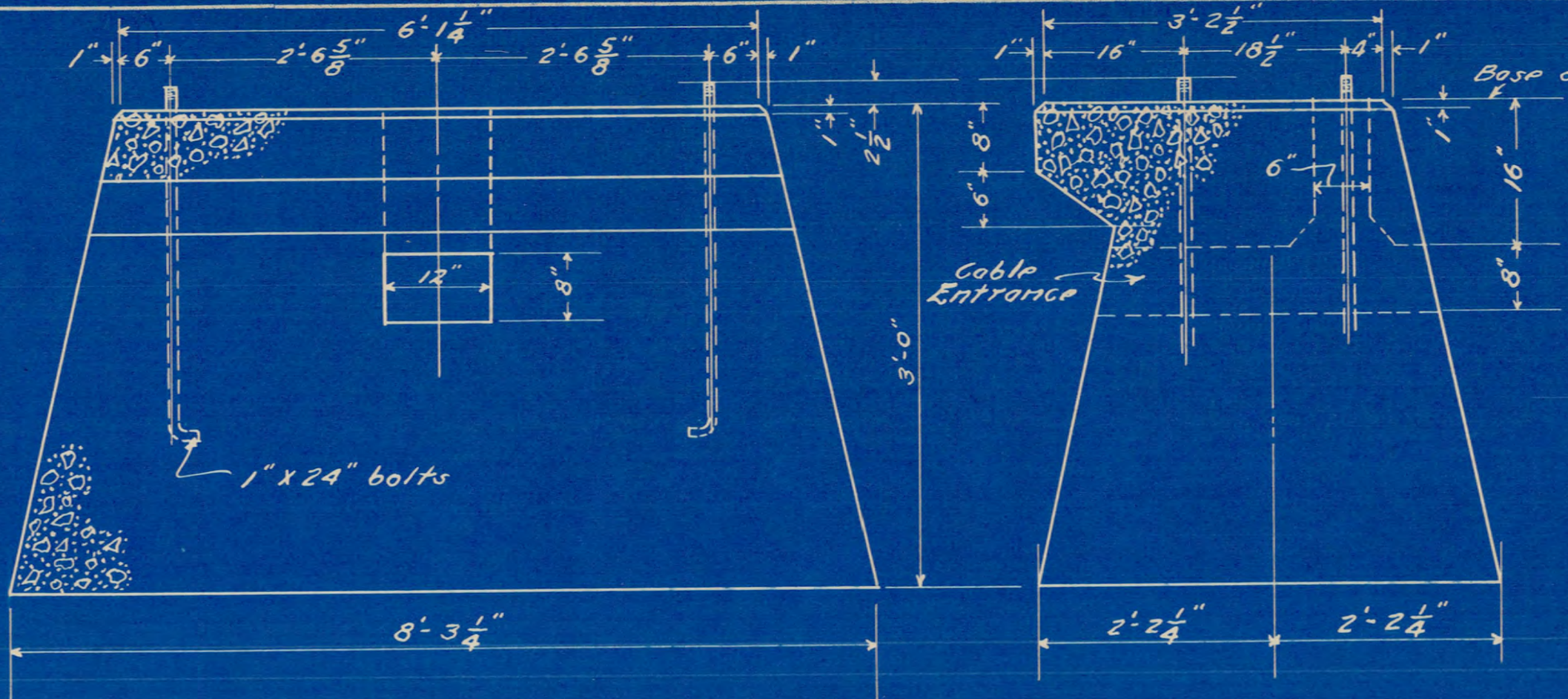
Revisions,

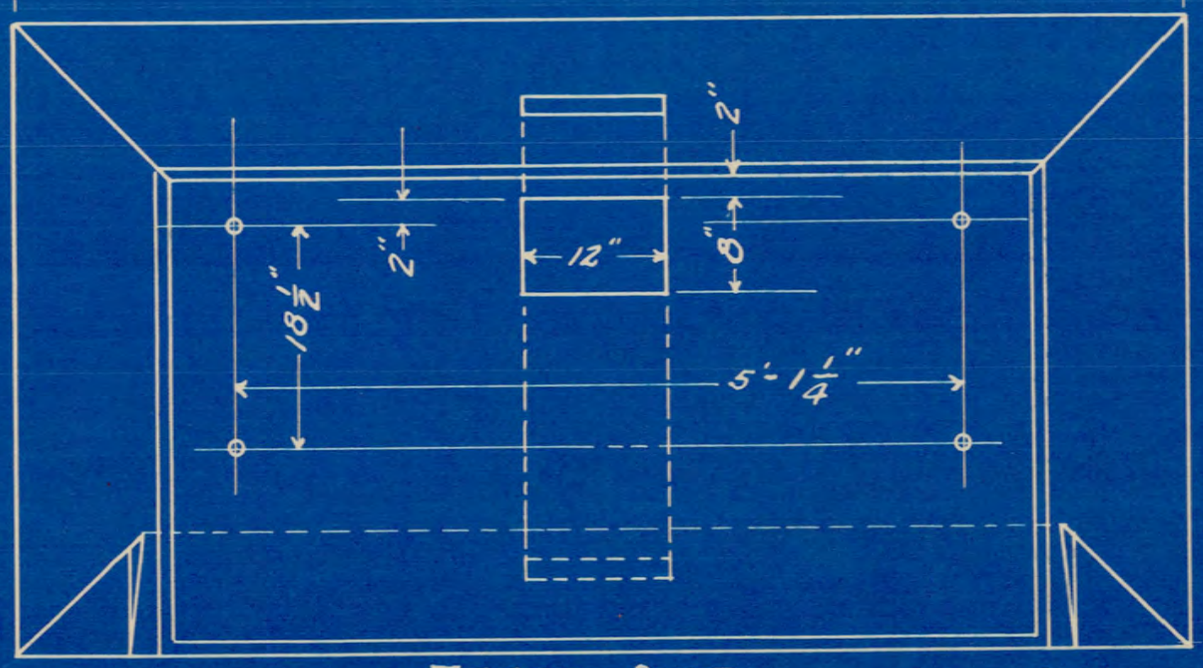
ELEVATION OF FOUNDATION WAS NOT SHOWN. 7-28-30.

Drawn W.E.H.
JULY 18, 1930.

A-88

Scale: 1" = 12".





TRACK SIDE

See Sheet 1 for Conc. Specs.

A. C. L. R. R.

FOUNDATION for primary battery Instrument Case.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

Drawn Nov. 24, 1933

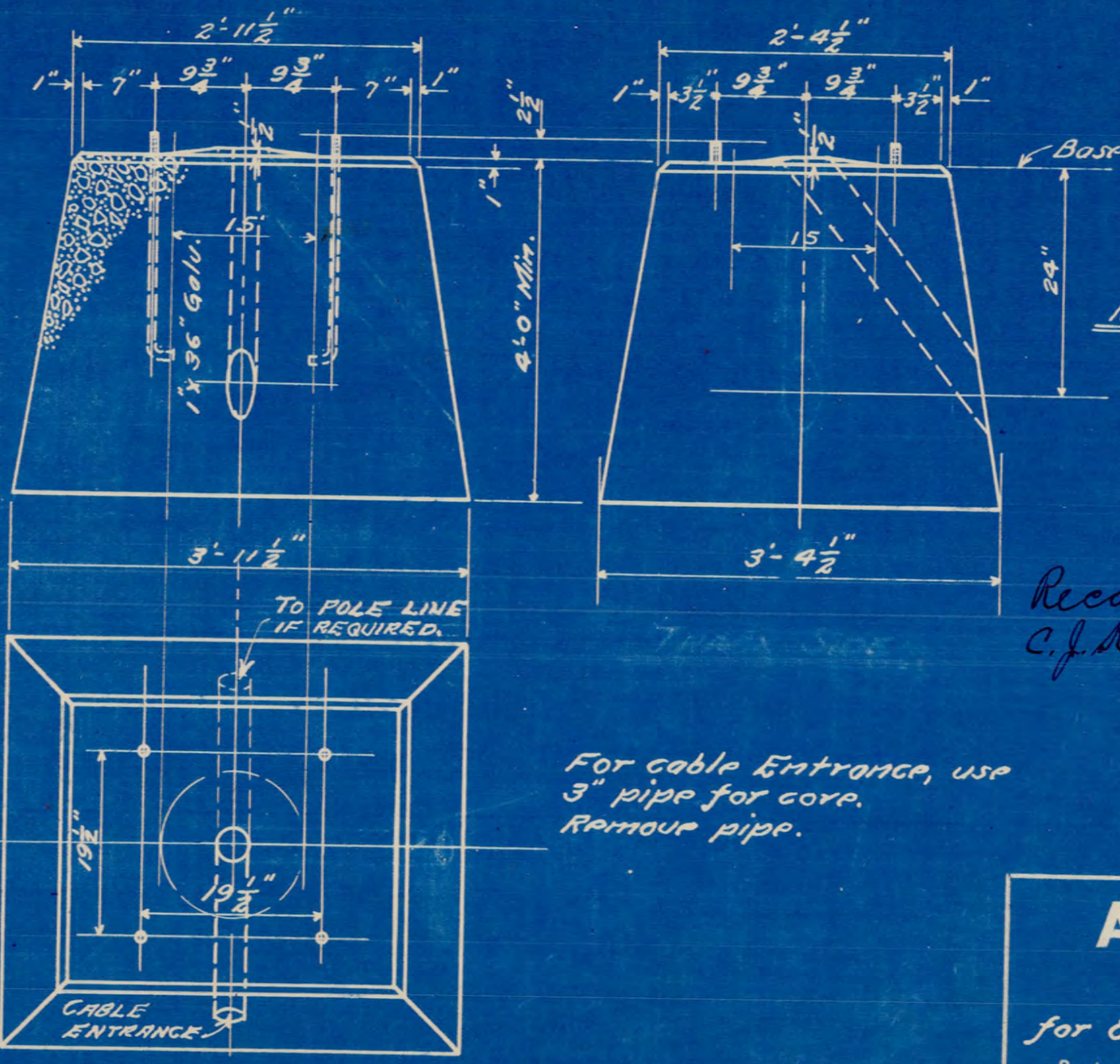
A-88

Revisions.

Scale:

For US&S Case L-4055

Sheet 20 of ____. ____ Prints



TRACK SIDE

NOTE: DEPTH OF FOUNDATION IS FOR SOLID GROUND. FOREMAN MUST USE HIS BEST JUDGEMENT FOR PROPER DEPTH.

Recd. 6-18-1936 with C.J.K. letter 6-16-1936

For cable Entrance, use 3" pipe for core. Armour pipe.

For U.S.&S. GOSP L-1135
Base Ref. 7
Revisions,

A. C. L. R. R.

FOUNDATION for 8 way battery housing.

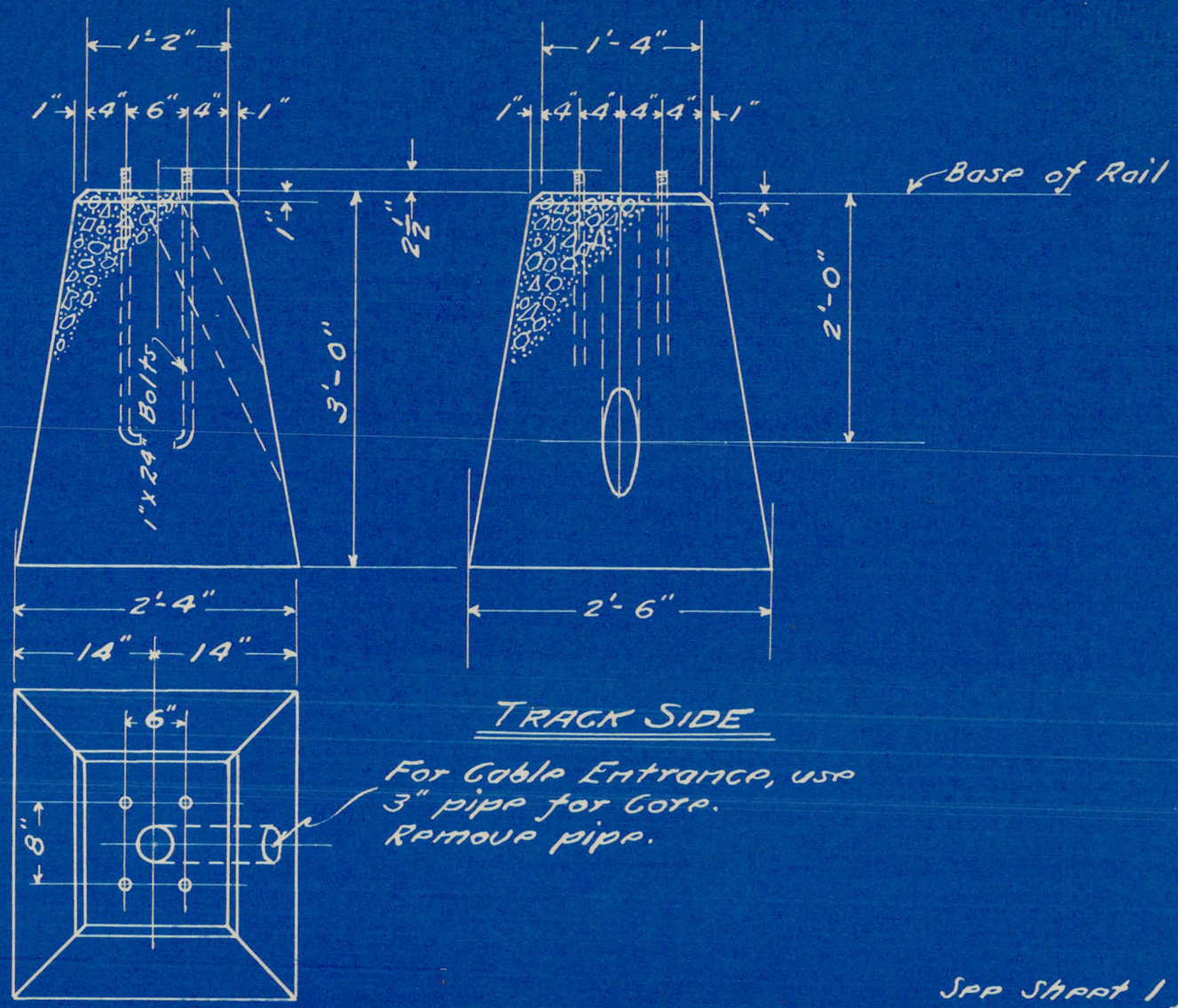
Supt. of Signals Office: Wilmington, N. C.

Approved | Correct

Chief Eng'r. | Supt. of Signals.

Scale:		OPENING TO TRK. SIDE. APR. 12, 1935.	Side to trk. was shown wrong. 4-3-35.	SIZE REVISED MAR. 21, 1935.	Supersedes A-88 Sh. 21 of 11-24-33.	Drawn C.A.W. Sept. 25, 1934.		A-88

Sheet 21 of ____. 2 Prints



TRACK SIDE

For Cable Entrance, use 3" pipe for Core. Remove pipe.

See Sheet 1 for Conc. Spec'i.

For US&S Case L-1018

For US&S Sw. Lamp ES10 Fig. A Pl. B3500 Where used between tracks, top of Spiral must not be more than 20" above base of rail.

A. C. L. R. R.

FOUNDATION for 4 Way Battery Housing.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

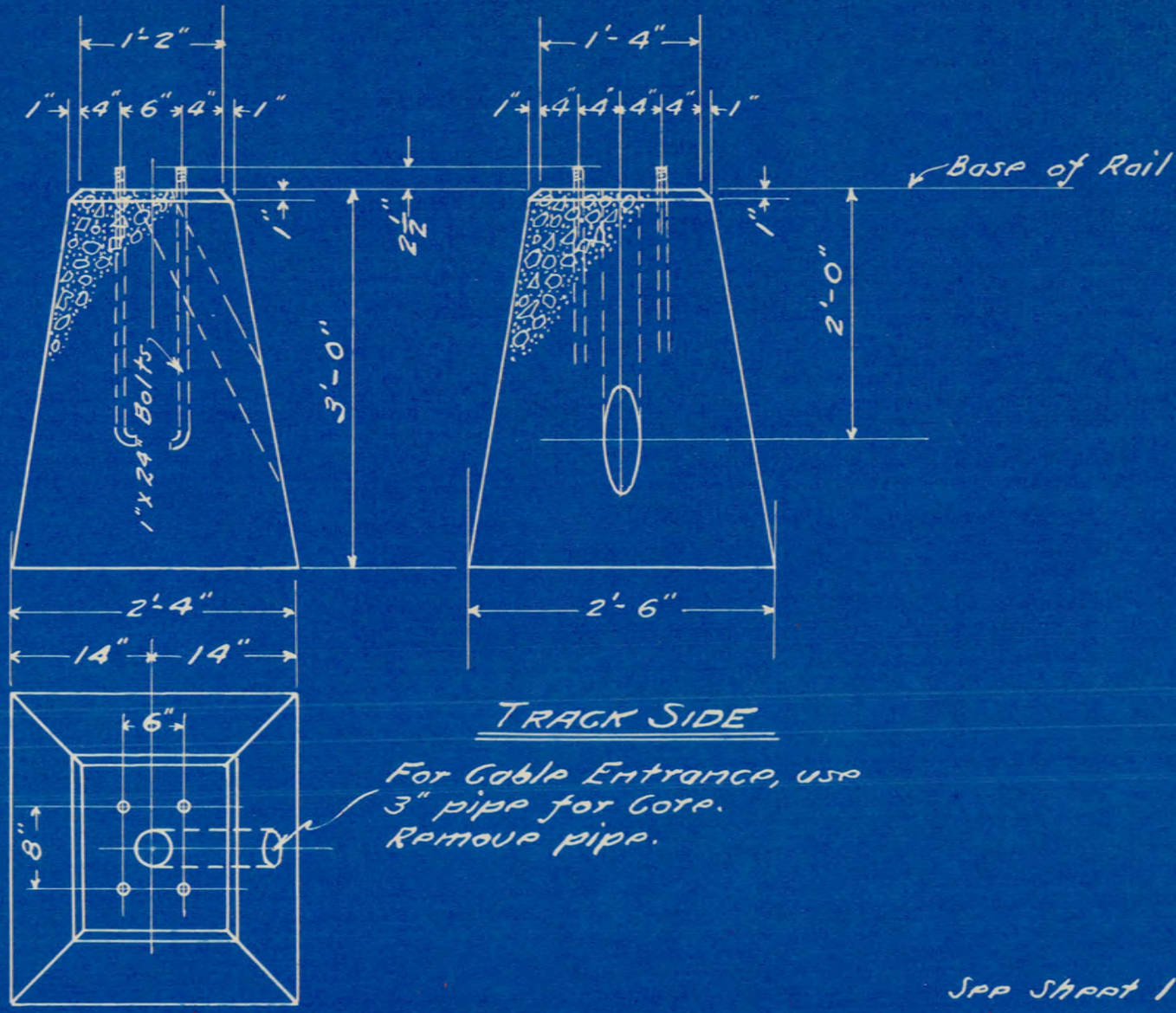
Revisions,

Scale:

Drawn Nov. 25, 1933.

A-88

Sheet 22 of ____. ____ Prints



TRACK SIDE

For Cable Entrance, use 3" pipe for Core. Remove pipe.

See Sheet 1 for Conc. Specs.

For US&S Case L-1018

For US&S Switch ES10 Fig A Pl. B3500
When used between tracks, top of Signal must not be more than 20" above base of rail.

A. C. L. R. R.

FOUNDATION for 4 Way Battery Housing.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

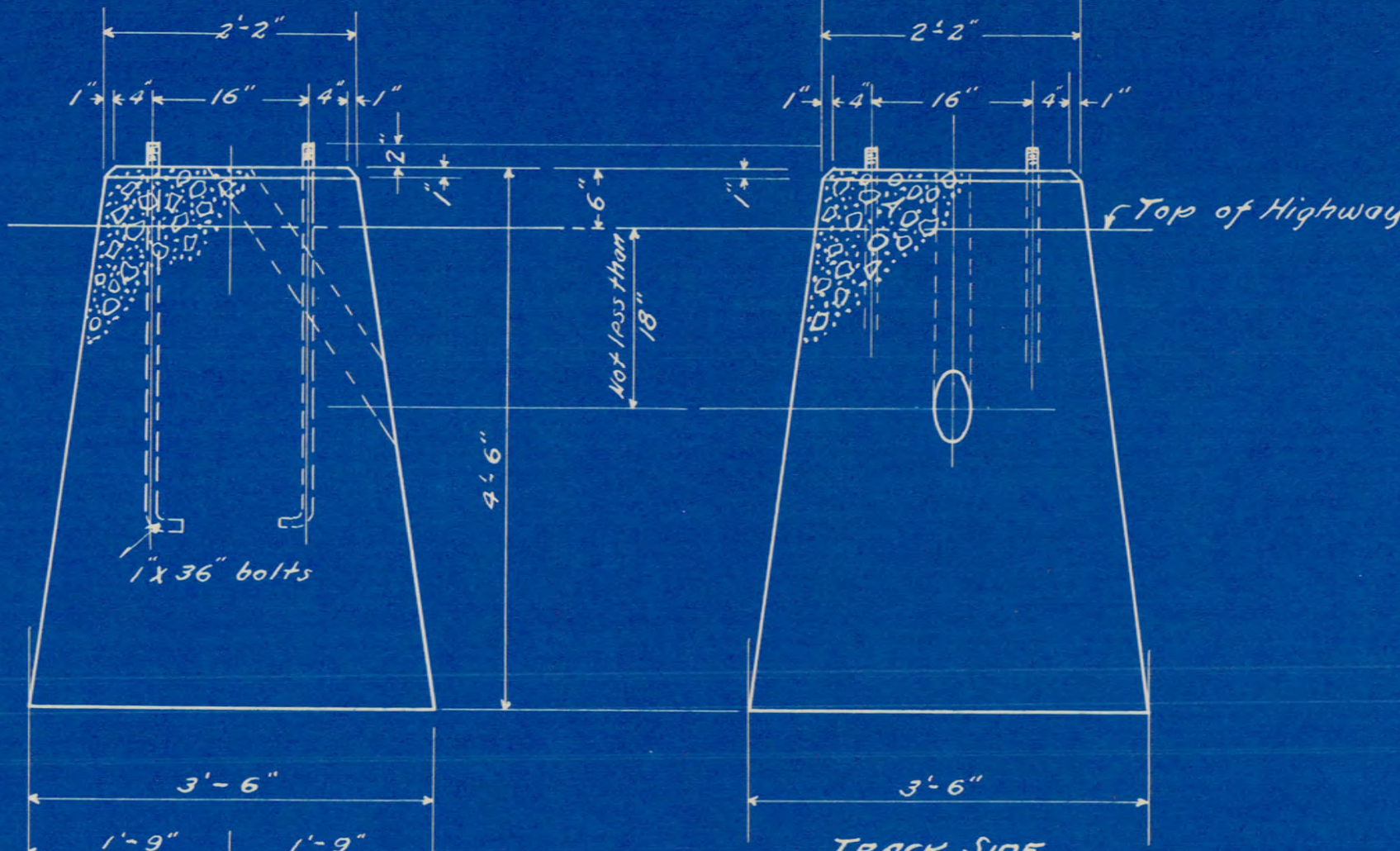
Revisions,

Drawn
Nov. 25, 1933.

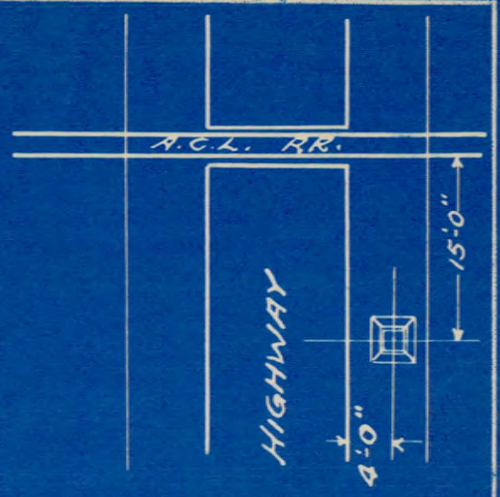
Scale:

A-88

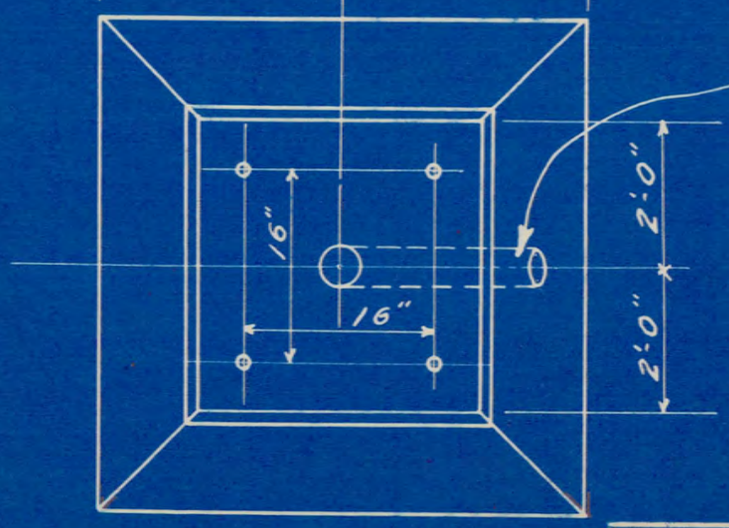
Sheet 22 of ____. ____ Prints



TRACK SIDE



LOCATION



For Cable Entrance, use 3" Pipe for Corp. Remove pipe.

See Sheet 1 for Specifications.

Revisions.

A. C. L. R. R.

FOUNDATION for Side of Highway.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

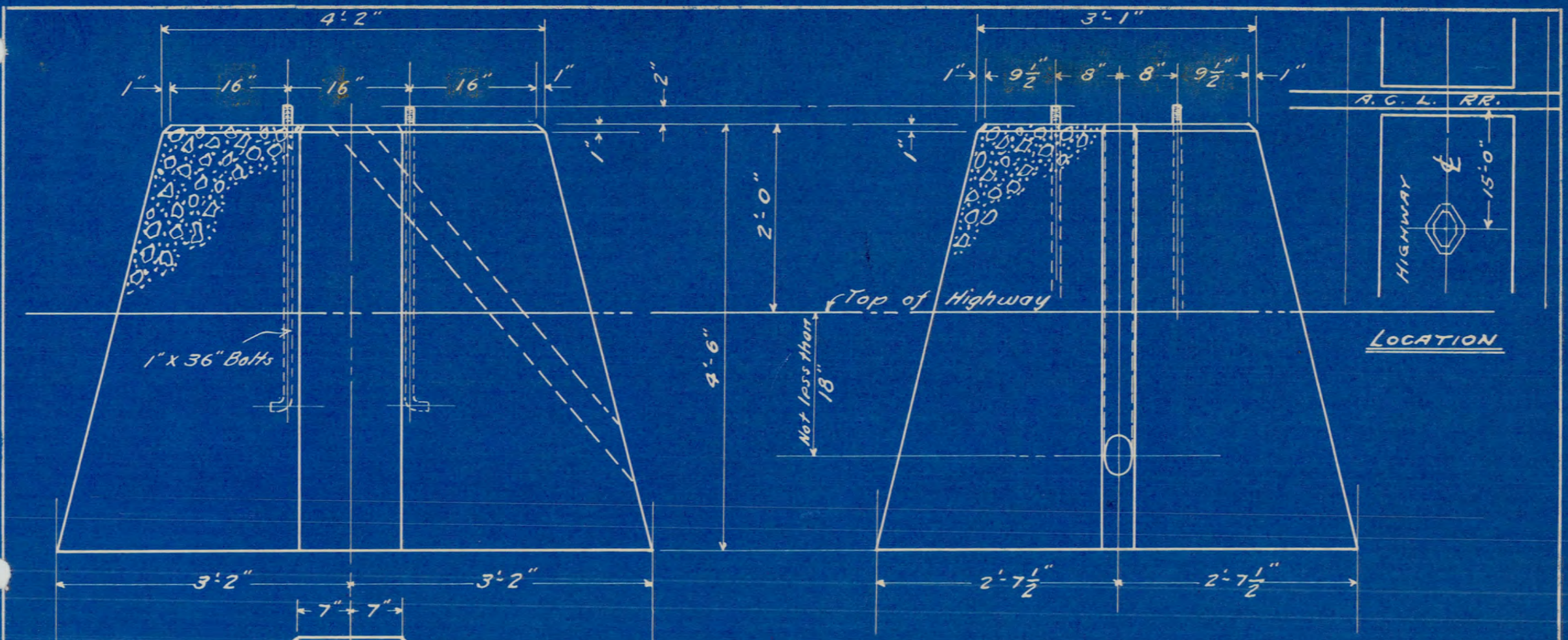
Chief Eng'r. Supt. of Signals.

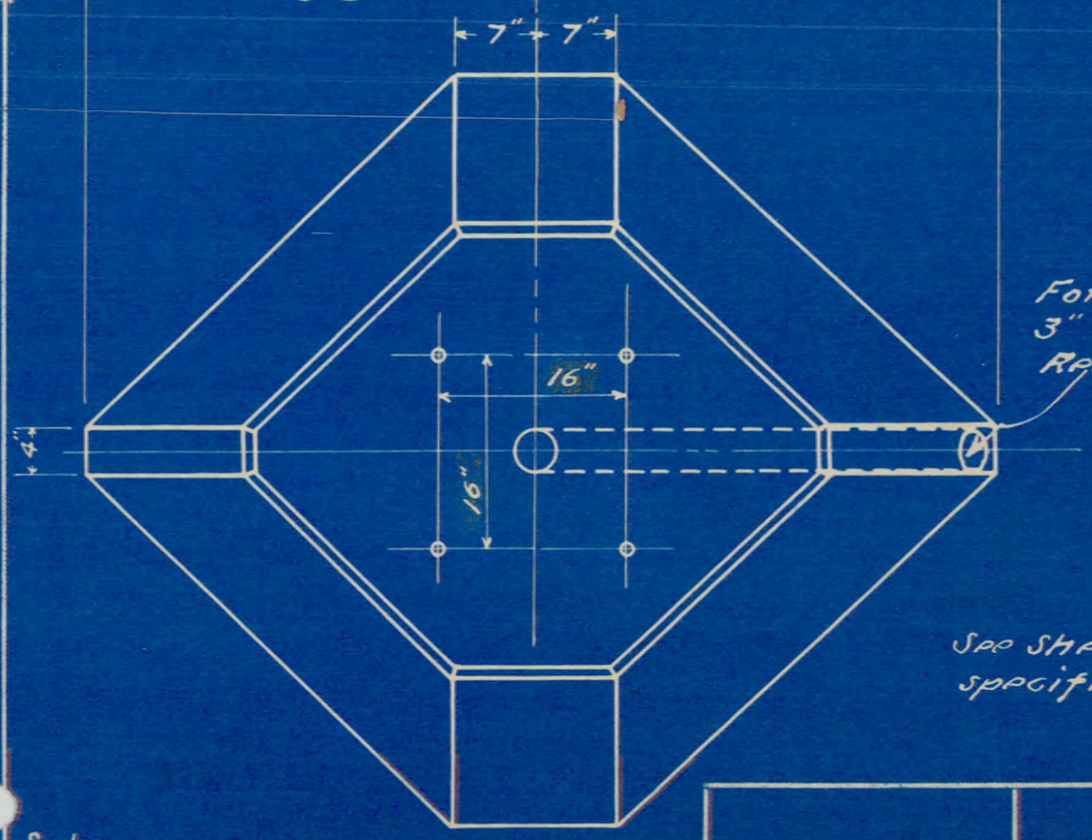
Drawn C.E.L.S.
Nov. 24, 1933.

A- 88

Scale:

Sheet 23 of ____. ____ Prints





For Cable Entrance, use 3" Pipe for corp. Remove pipe

See Sheet 1 for specifications.

A. C. L. R. R.

FOUNDATION for Center of Highway.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

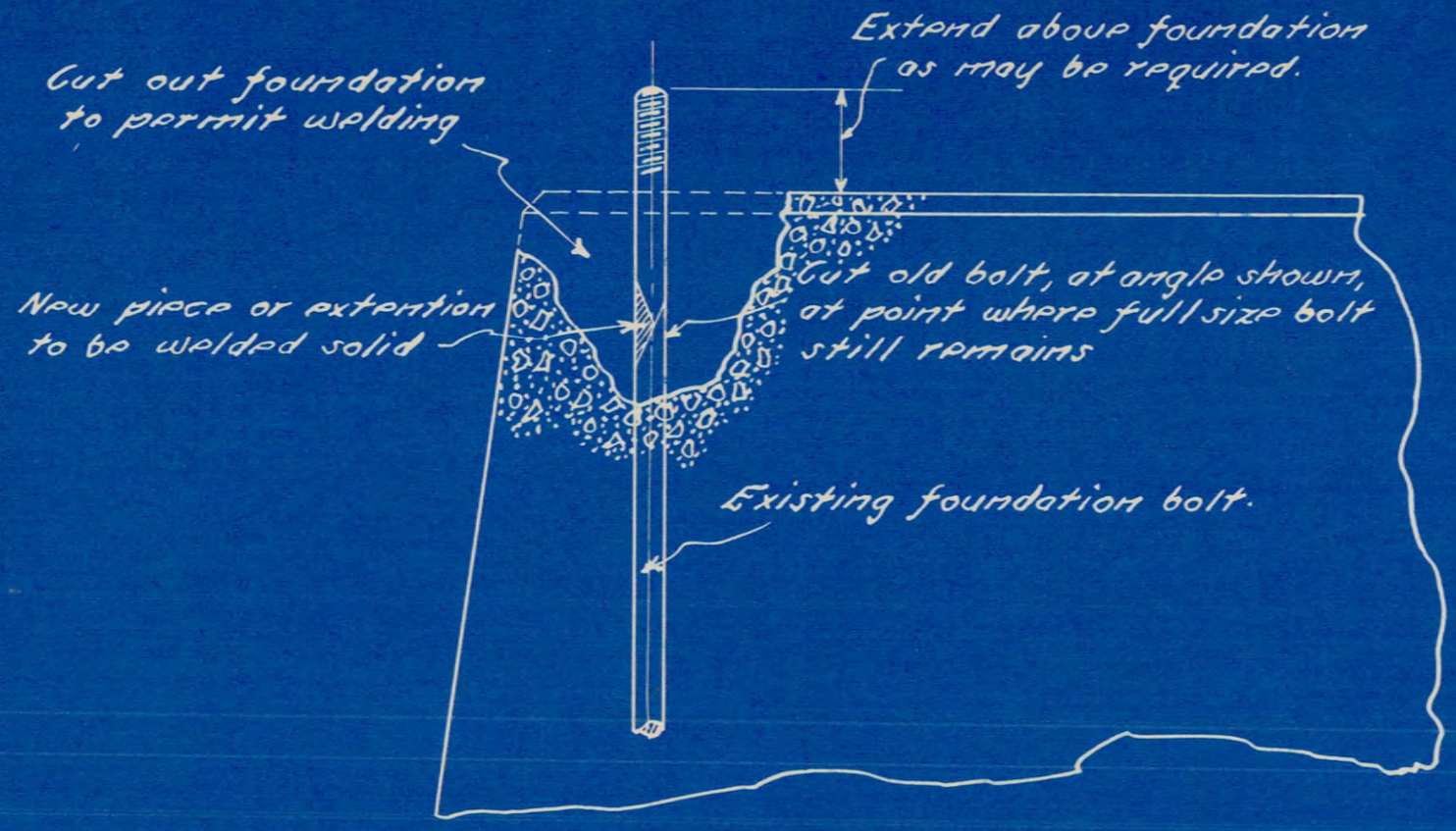
Revisions.

Drawn C.R.L.
Nov. 24, 1933.

A- 88

Scale:

Sheet 24 of ____. ____ Prints


Extend above foundation as may be required.
Cut out foundation to permit welding
New piece or extention to be welded solid
Cut old bolt, at angle shown, at point where full size bolt still remains
Existing foundation bolt.

A. C. L. R. R.

Repairing Rusted or corroded foundation bolts.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

Revisions.

Drawn Nov. 17, 1933.

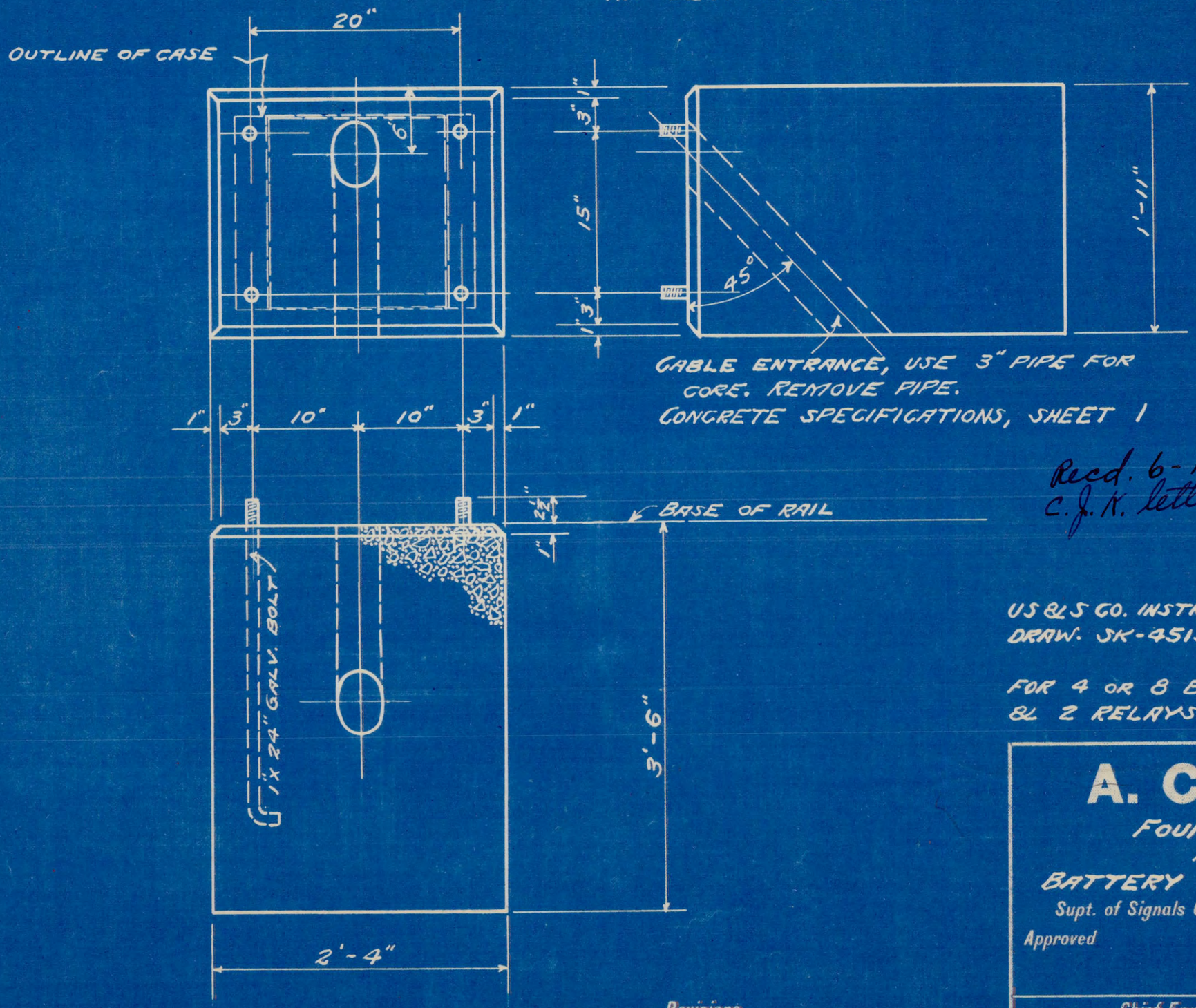
A- 89

Scale:

Sheet ___ of ___ ___ Prints

NOTE: DEPTH OF FOUNDATION IS FOR SOLID GROUND. FOREMAN MUST USE HIS BEST JUOGEMENT FOR PROPER DEPTH.

FIELD SIDE



CABLE ENTRANCE, USE 3" PIPE FOR CORE. REMOVE PIPE.
CONCRETE SPECIFICATIONS, SHEET 1

.65 CU. YDS

Recd. 6-18-1936 with C. J. K. letter 6-16-36

US & S CO. INSTR. CASE
DRAW. SK-4513 SH. 1 (NEW STEEL)

FOR 4 OR 8 BATT. OR 4 BATT. & 2 RELAYS.

A. C. L. R. R.

FOUNDATION FOR BATTERY OR RELAY CASE.

Supt. of Signals Office: Wilmington, N. C.

Approved | Correct

Chief Eng'r. | Supt. of Signals.

Revisions,

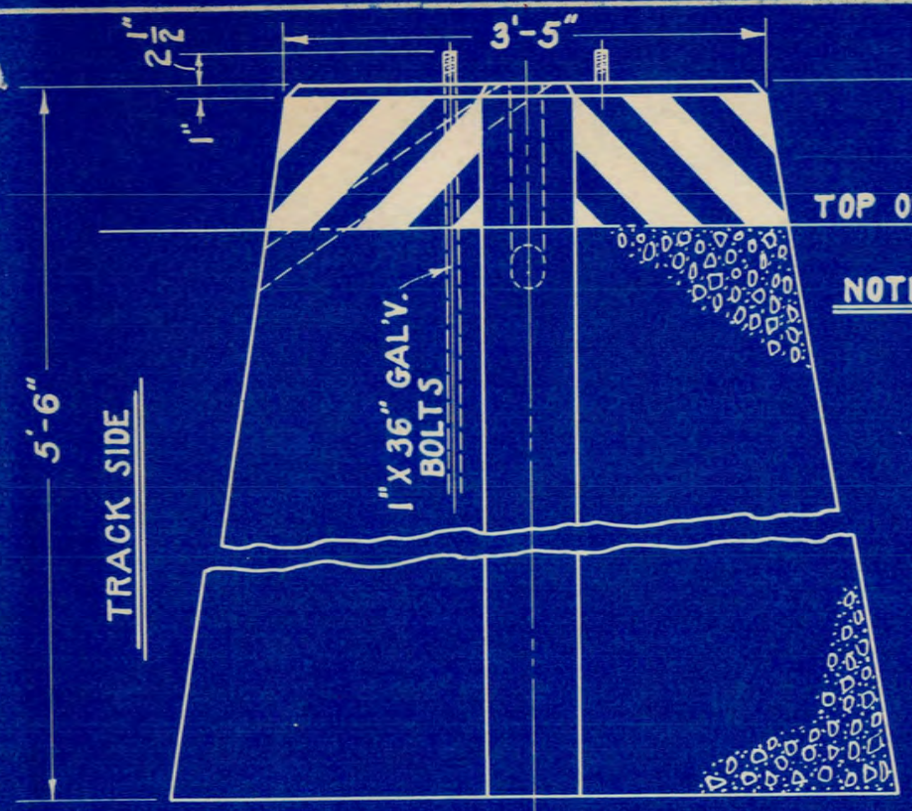
Cable entrance revised. MAR. 24, 1936.

Drawn C.K.W. MAR. 25, 1935.

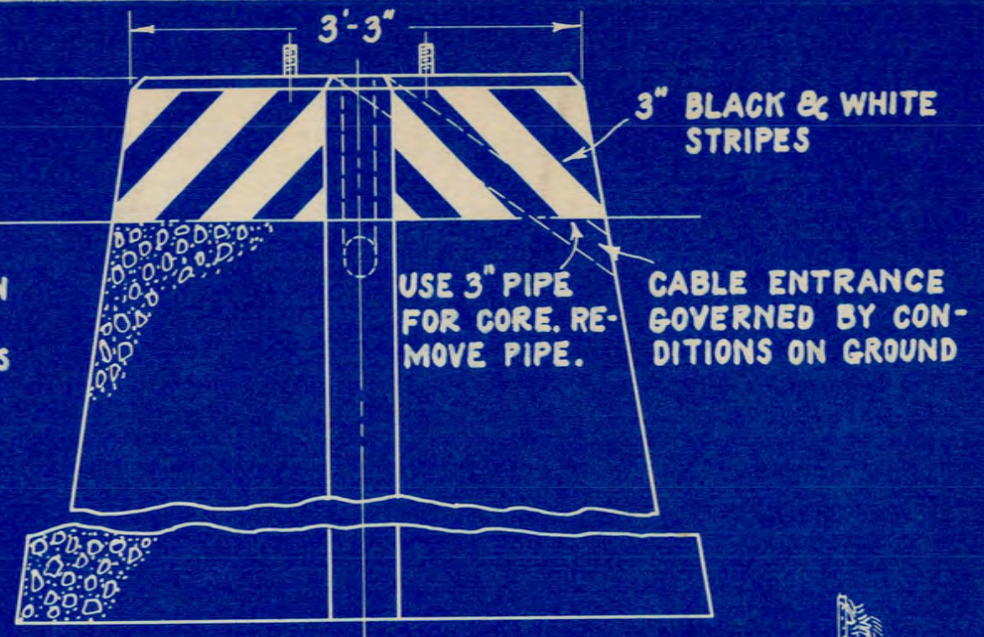
A- 88

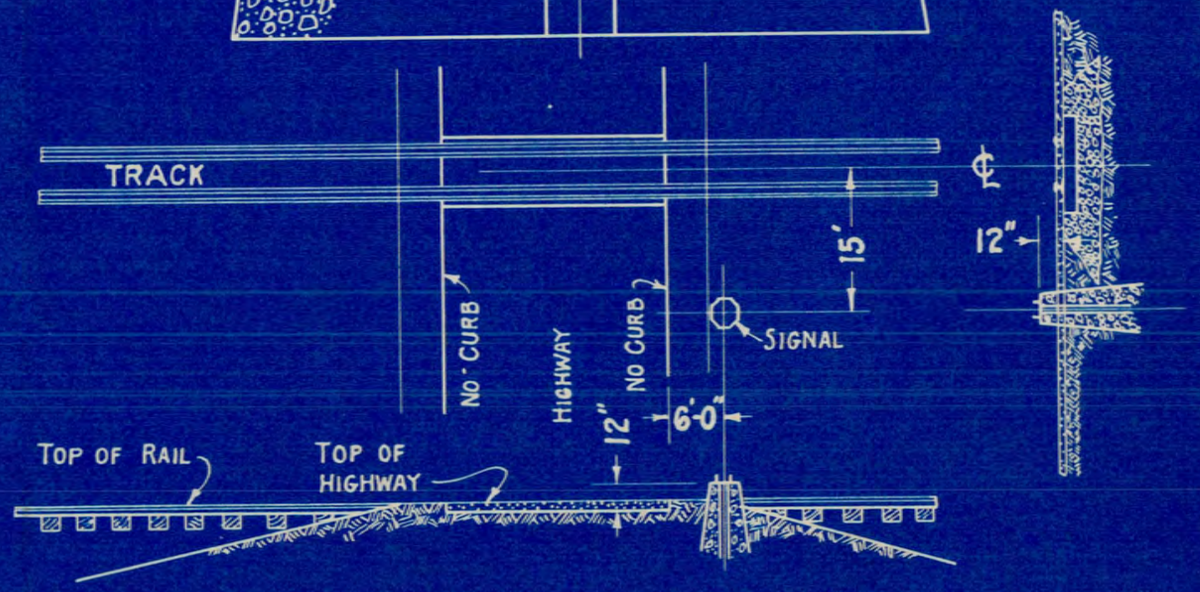
Scale:

Sheet 26 of ____. 2 Prints

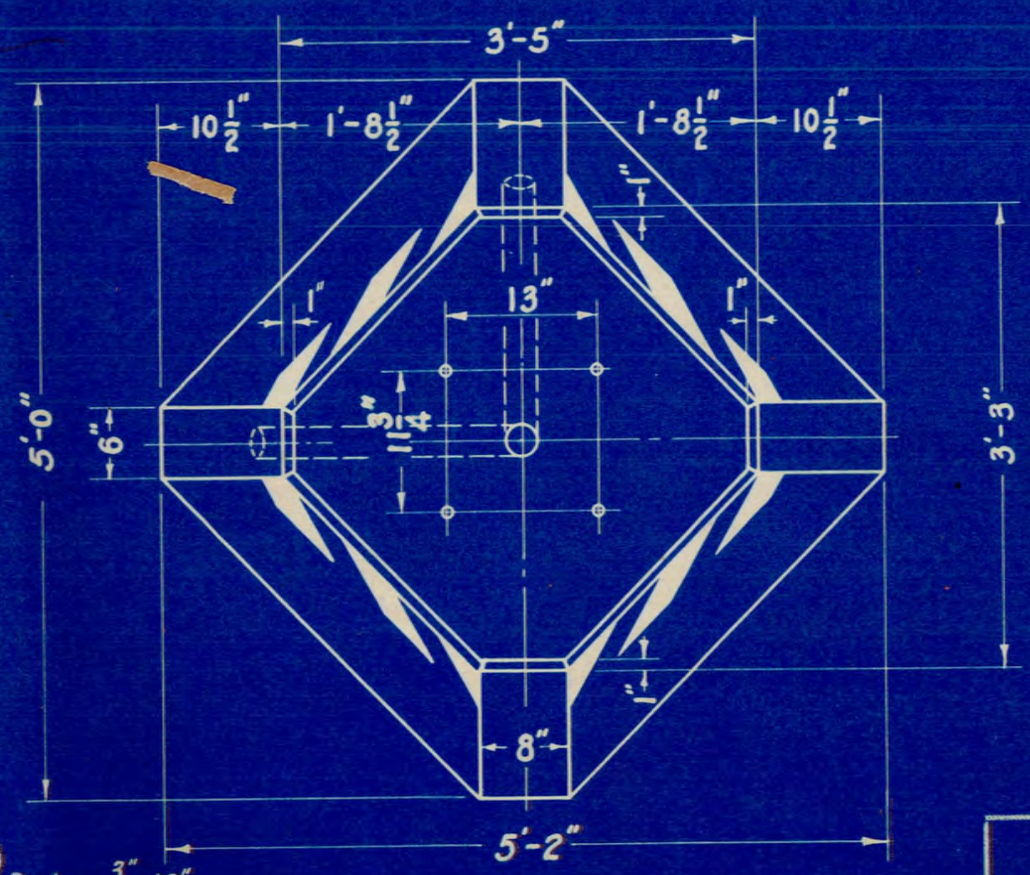


NOTE: DEPTH OF FOUNDATION IS FOR SOLID GROUND. FOREMAN MUST USE HIS BEST JUDGEMENT FOR PROPER DEPTH.





LOCATION OF FOUNDATION - WITHOUT CURB.



Scale: $\frac{3}{4}$" = 12"

A. C. L. R. R.

FOUNDATION FOR
HIGHWAY CROSSING SIGNAL
FLASHING LIGHT TYPE WITH ROTATING DISC

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

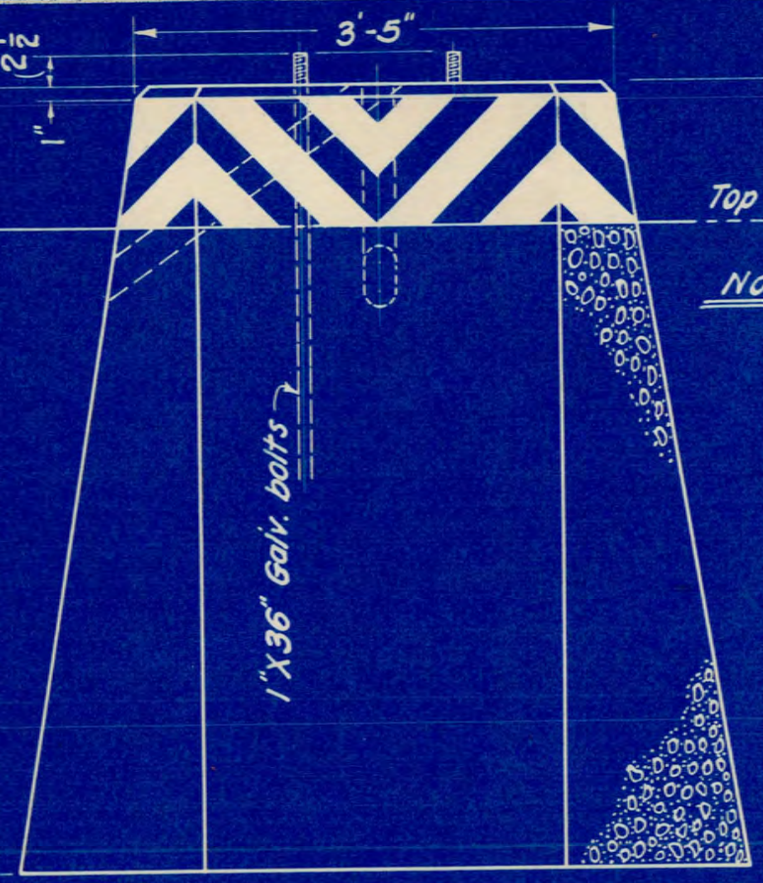
Revisions,

Drawn WEH
Oct. 28, 1936.

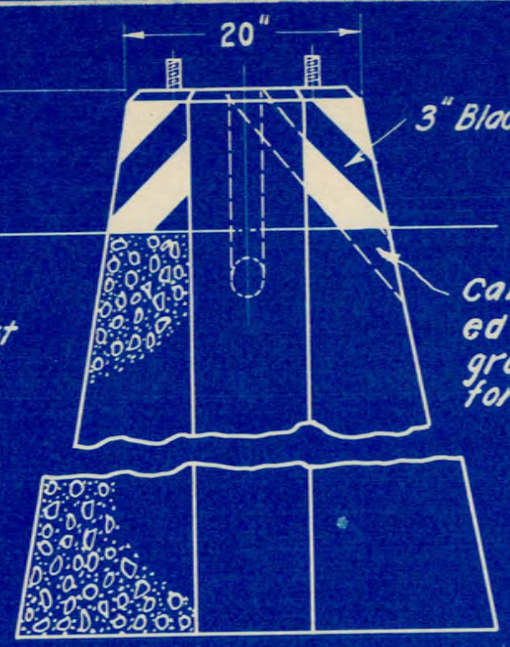
A- 88

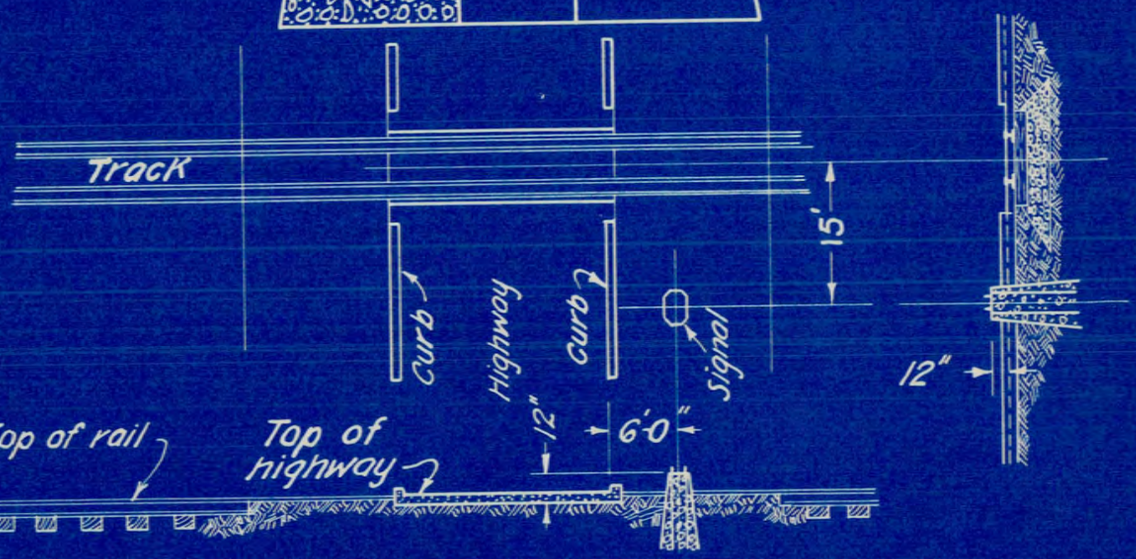
Sheet 32 of ____. ____ Prints

GENERAL ENG. DEPT.
PRINT RECORD
REC'D DEC 16 1936 WITH
LETTER FROM RR60
DATED DEC 12 1936
SENT OUT WITH LETTER
OF ..... TO .....

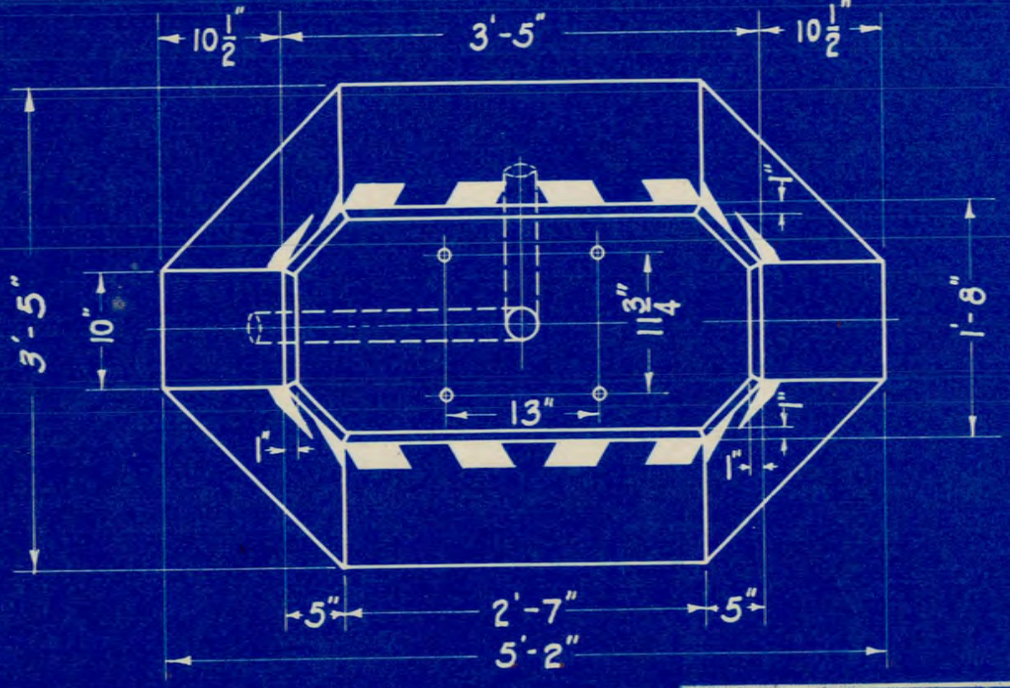


Note: Depth of foundation is for solid ground. Foreman must use his best judgement for proper depth.





Location of Foundation - With Curb.



Scale: ¾" = 12"

A. C. L. R. R.

FOUNDATION FOR
HIGHWAY CROSSING SIGNAL
FLASHING LIGHT TYPE WITH ROTATING DISC
SIDE OF ROAD WITH CURB

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

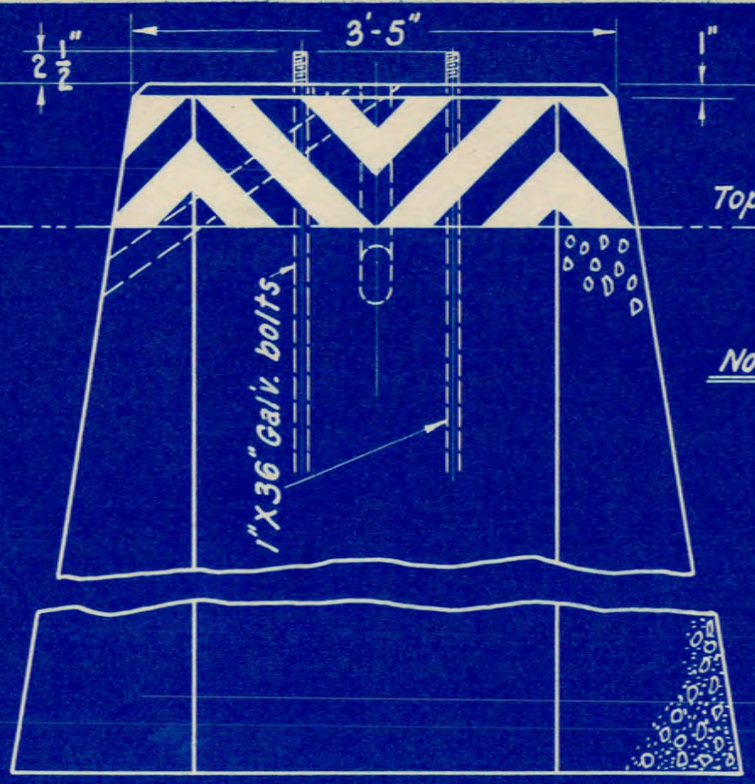
Revisions.

Drawn WEH
Oct. 29, 1936.

A-88

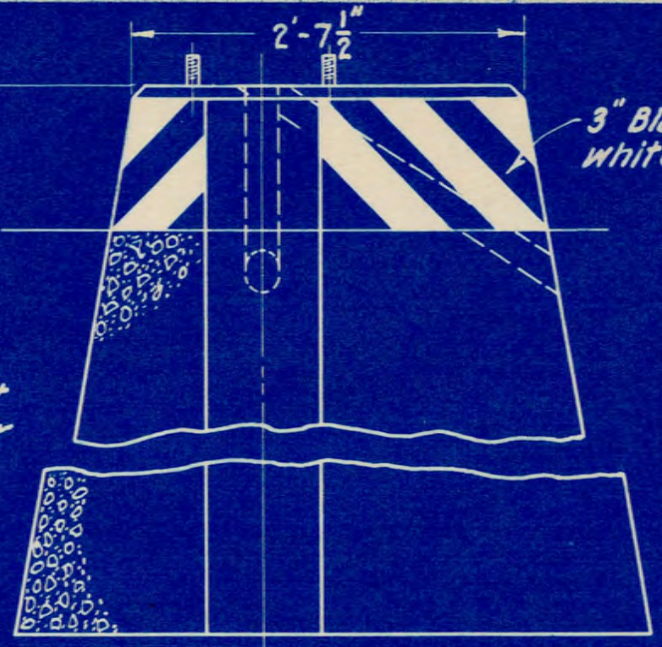
Sheet 33 of ____. 21 Prints

GENERAL ENG. DEPT.
PRINT RECORD
REC'D DEC 16 1936 WITH
LETTER FROM RR Co
DATED DEC 12 1936
SENT OUT WITH LETTER
OF ..... TO .....



Top of highway

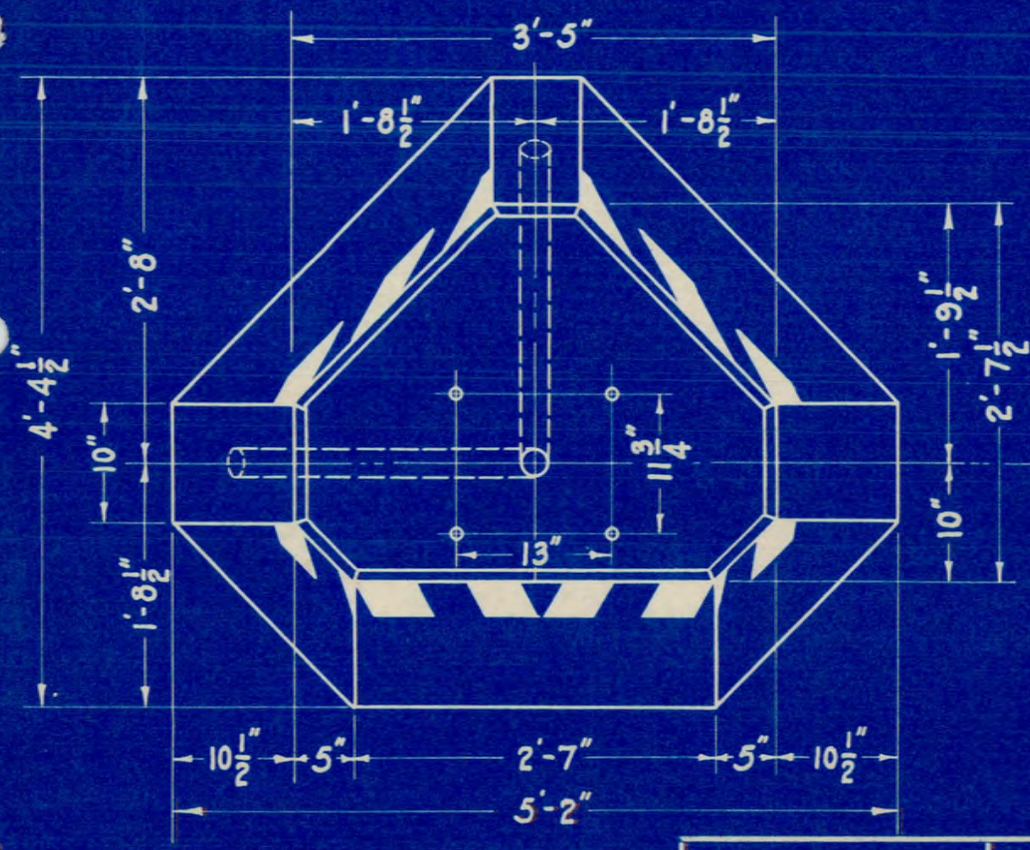
12"



Note:- Depth of foundation is for solid ground. Foreman must use his best judgement for proper depth.

Cable entrance to be governed by conditions on ground. Use 3" pipe for core (Remove pipe).

Location of foundation will be shown on layout circuit plan.



STREET SIDE

This half similar to found. A-88-32 form C-71

This half similar to found. A-88-33 form C-72

WALK SIDE

Revisions.

A. C. L. R. R.

SPECIAL FOUNDATION FOR HIGHWAY CROSSING SIGNAL FLASHING LIGHT TYPE WITH ROTATING DISC

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

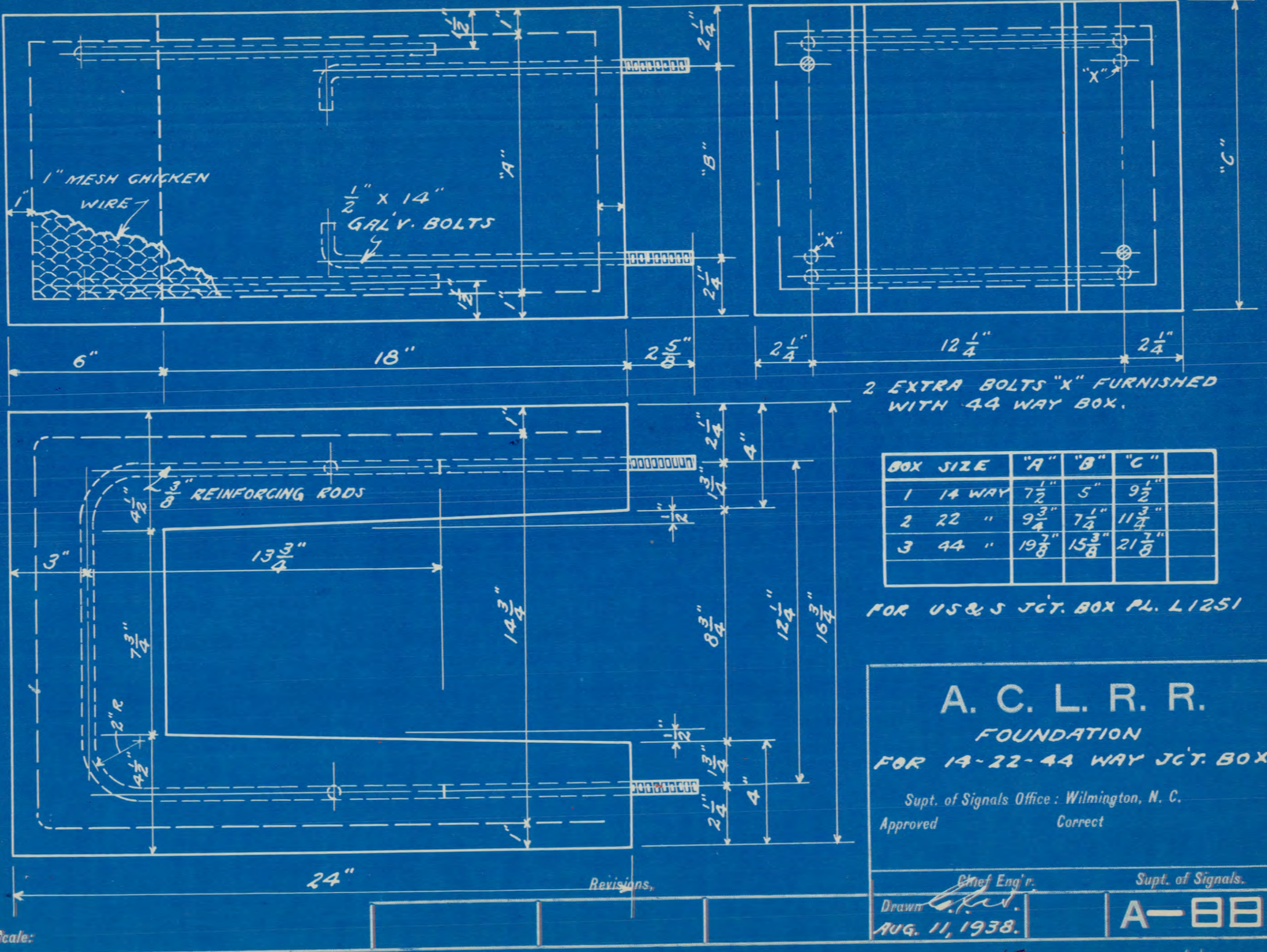
Drawn WEH
Oct. 30, 1936.

A- 88

Scale: 3/4" = 12"

21 Prints

GENERAL ENG. DEPT.
PRINT RECORD
REC'D DEC 16 1936 WITH
LETTER FROM RRC
DATED DEC 12 1936
SENT OUT WITH LETTER
OF ..... TO .....



2 EXTRA BOLTS "X" FURNISHED WITH 44 WAY BOX.

BOX	SIZE	"A"	"B"	"C"	
1	14 WAY	7 1/2"	5"	9 1/2"	
2	22 "	9 3/4"	7 1/4"	11 3/4"	
3	44 "	19 7/8"	15 3/8"	21 7/8"	

FOR U.S.&S. JC'T. BOX PL. L1251

A. C. L. R. R.

FOUNDATION FOR 14-22-44 WAY JC'T. BOX.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

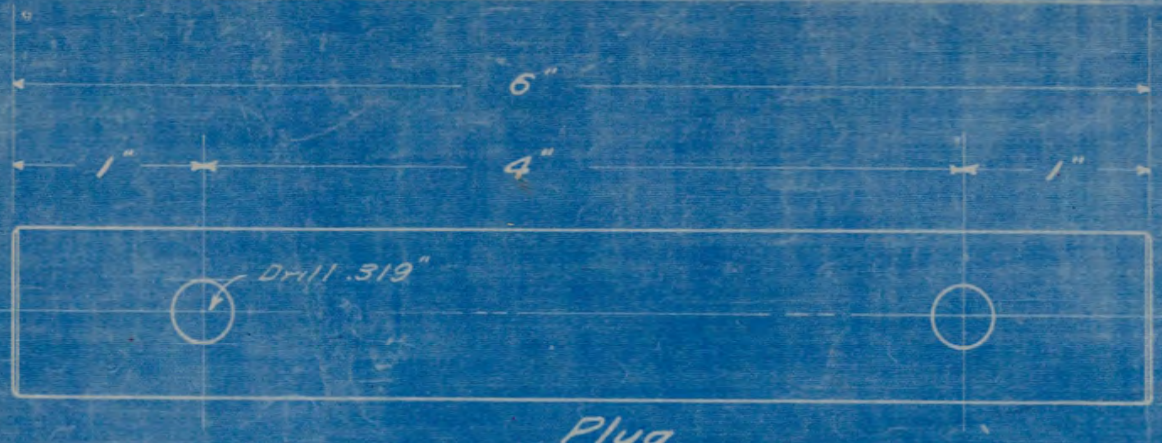
Drawn C.H.S. AUG. 11, 1938.

A—88

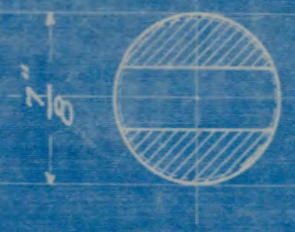
Revisions,

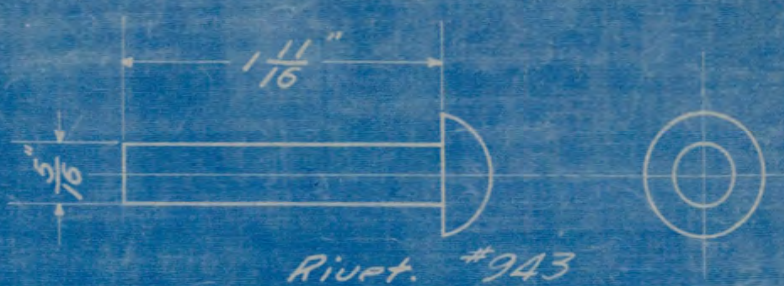
Scale:

Sheet 37 of ____. 11 Prints

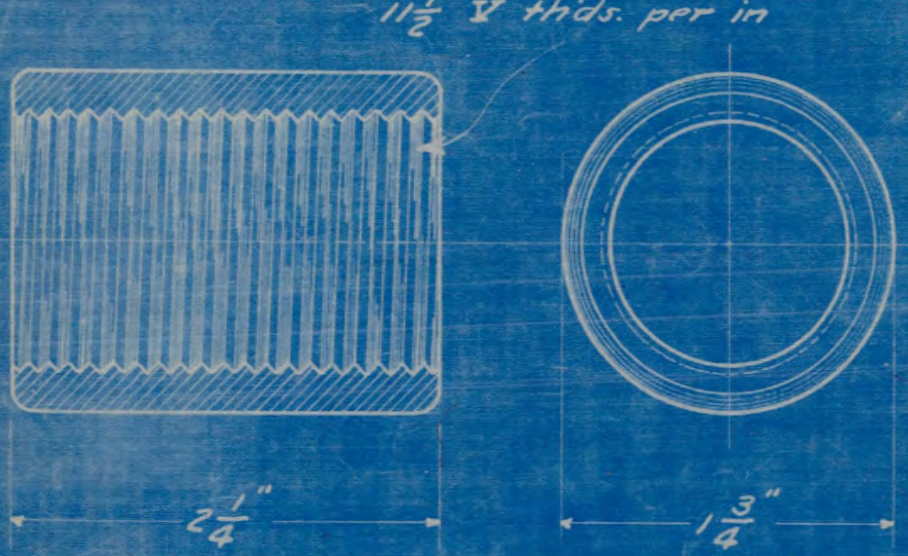


Plug
Merchant bar steel.
#942

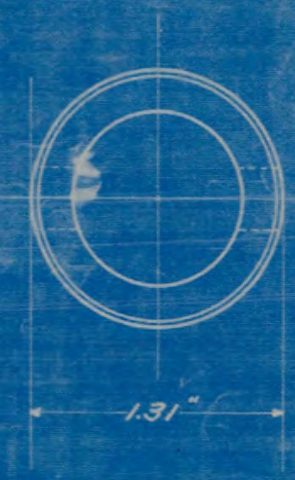




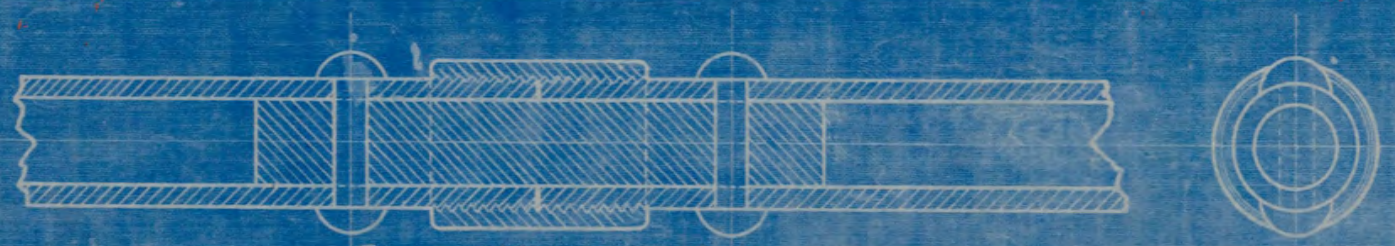
Rivet. #943
Soft iron or steel.



Wrot iron coupling.
#941



Section of pipe
#940



Connection complete

A.C.L.R.R.

Std. signal pipe, plug, rivet and coupling. 2.17# pipe.
See A-93 for Specifications.

Signal Engrs Office Wilmington N.C.

Approved Correct

Chief Engr. Signal Engr.

Scale 12" = 1'-0"

Holes in pipe & plug changed to .319" June 23. 17.	Ends of Coupler sleeve not shown rounded. May 30, 1917.	Supersedes A-94 of Aug. 17. 1910.	Drawn [illegible] Jan. 13, 1914.		A—94

- SPECIFICATIONS FOR ONE INCH SIGNAL PIPE -
-(SOFT STEEL)-

* * * * ***** * * * *

PIPE

1. Pipe must be of soft steel, straight, tough and uniform in quality; free from cinder pockets, blisters, burns and other injurious flaws. Must be hot galvanized inside and outside, unwiped.

   (a) The steel shall conform to the following requirements as to chemical composition:
   1. Phosphorus, not more than 0.11 per cent.
   2. Copper, 0.20 per cent to 0.35 per cent.

   (b) The ends of all pipe (for a distance of at least 6") are to be annealed before galvanizing.

2. The tensile strength, limit of elasticity and ductility shall be determined from a test piece cut from the finished pipe.

3. The pipe shall have a tensile strength of not less than 50,000 pounds per square inch, and an elastic limit of not less than 30,000 pounds per square inch, and an elongation of not less than 18 per cent in a measured length of eight inches. All extra strong pipe must stand a test of 700 pounds per square inch internal hydrostatic pressure without leak.

4. The weight of one foot of one inch pipe before galvanizing should be 2.17 pounds, and in no case will pipe be accepted weighing less than 2.06 pounds per foot, weight of coupling not included.

5. The outside diameter of pipe must conform to Brigg's standard. Any pipe enough less than 1.31 inch in diameter to result in flat thread will be rejected.

6. The manufacturer shall furnish all necessary facilities for making tests and the tests shall be made at the Mill.

7. Inside diameter of all pipe must be large enough to receive a hardened steel plug of 57/64 inch diameter for a length of four inches, not a drive fit.

8. Not more than one per cent of pipe less than fifteen feet long will be accepted, lengths of seventeen feet and over preferred.

9. The ends of pipe must be cut square and drilled for one 5/16 inch rivet on both ends; center of rivet hole shall be drilled two inches from the end.

10. Each length of pipe shall have a thread 1-1/16 inch long, 3/8 inch total taper per foot, 11-1/2 "V" threads to the inch, slightly rounded top and bottom. The threaded portion of the pipe shall be of such diameter as to permit the coupling to be screwed on five turns by hand, with permissible variation of one turn either way.

COUPLINGS:

Couplings are to be galvanized, to be 2-1/4 inches long and 1-3/4 inches outside diameter, of seamless steel, free from defects and tapped straight through; pitch diameter of thread to be 1.26 inches, variation not more than .003 of an inch, so as to fit pipe as per section 10 of this specification.

PLUGS:

Plugs must be merchant bar steel six inches long, 7/8 inch in diameter, drilled for two 5/16 inch rivets with drill .319. Spacing to be one inch, four inch, one inch. plugs to be cut off square in lathe.

RIVETS:

Rivets must be galvanized, must be of soft iron or steel 5/16 inch in diameter, 1-11/16 inches long.

CORRECT: APPROVED:

Superintendent of Signals Chief Engineer.

DRAWING NUMBER - [illegible]
Office of Superintendent of Signals,
ATLANTIC COAST LINE RAILROAD COMPANY
Drawn: December 19, 1928
RSH.

Supersedes Drawing A-93
of January 14, 1914.

Was A-93 Jan. 29, 1929. | A-94

SPECIFICATIONS FOR ONE INCH SIGNAL PIPE
(WROUGHT IRON)

Pipe

1. Pipe must be genuine wrought iron made from puddled pig iron; no scrap will be permitted except the crop ends of wrought pipe, itself. Pipe must be straight, tough, fibrous and uniform in quality throughout, free from cinder pockets, blisters, burns and other injurious flaws. Pipe must be hot galvanized inside and outside, unwiped.
2. The tensile strength, limit of elasticity and ductility, and weld, shall be determined from a test piece cut from finished pipe.
3. All pipe shall have a tensile strength of not less than forty-three thousand (43,000) pounds per square inch, and an elastic limit of not less than thirty thousand (30,000) pounds per square inch, and an elongation of not less than ten percent (10%) in a measured length of eight (8) inches. All pipe must stand one thousand (1000) pounds per square inch, hydraulic pressure.
4. The weight of one foot of one inch Extra Heavy Pipe, before galvanizing should be 2.17 pounds, allowing a variation of 5% either under or over and in no case will pipe be accepted weighing less than 2.0615 pounds or more than 2.2785 pounds per foot, weight of couplings not included.
5. The outside diameter of pipe must conform to Brigg's Standard. Any pipe enough less than 1.31 inches in diameter to result in flat thread will be rejected.
6. The manufacturer shall furnish all necessary facilities for making tests and the tests shall be made at the mill.
7. Inside diameter of pipe must be large enough to receive a hardened steel plug of seven-eighths (7/8) inch diameter for a length of six (6) inches.
8. Not more than one per cent (1%) of pipe less than fifteen (15) feet long will be accepted, lengths of seventeen (17) feet and over preferred.
9. The ends of pipe must be cut square and drilled for one five-sixteenth (5/16) inch rivet on both ends. Center of rivet hole shall be two (2) inches from end.
10. Each length of pipe shall have a thread one and one-sixteenth (1-1/6) inches long, three-eighths (3/8) inches total taper per foot, eleven and one-half (11-1/2) slightly rounded top and bottom "V" threads to the inch. The threaded portions of the pipe shall be of such diameter as to admit the coupling to be screwed on five (5) turns by hand, with a permissible variation of one (1) turn either way.

Couplings:

Pipe couplings must be galvanized, must be two and one-quarter (2-1/4) inches long and one and three-quarters (1-3/4) inches outside diameter, of wrought iron, free from defects, faced at ends, tapped straight through, pitch diameter of thread to be such as to fit pipe as per section 10, above, varying not more than .003 of an inch.

Plugs:

Plugs must be wrought iron or merchant bar steel six (6) inches long, seven-eighths (7/8) inches in diameter, drilled for two five-sixteenths (5/16) inch rivets, spaced one (1) inch, four inches and one (1) inch.

Rivets:

Rivets must be galvanized, must be wrought iron or soft steel, five-sixteenths (5/16) inch in diameter and one and eleven-sixteenths (1-11/16) inches long.

Correct: Approved:

Superintendent of Signals Chief Engineer

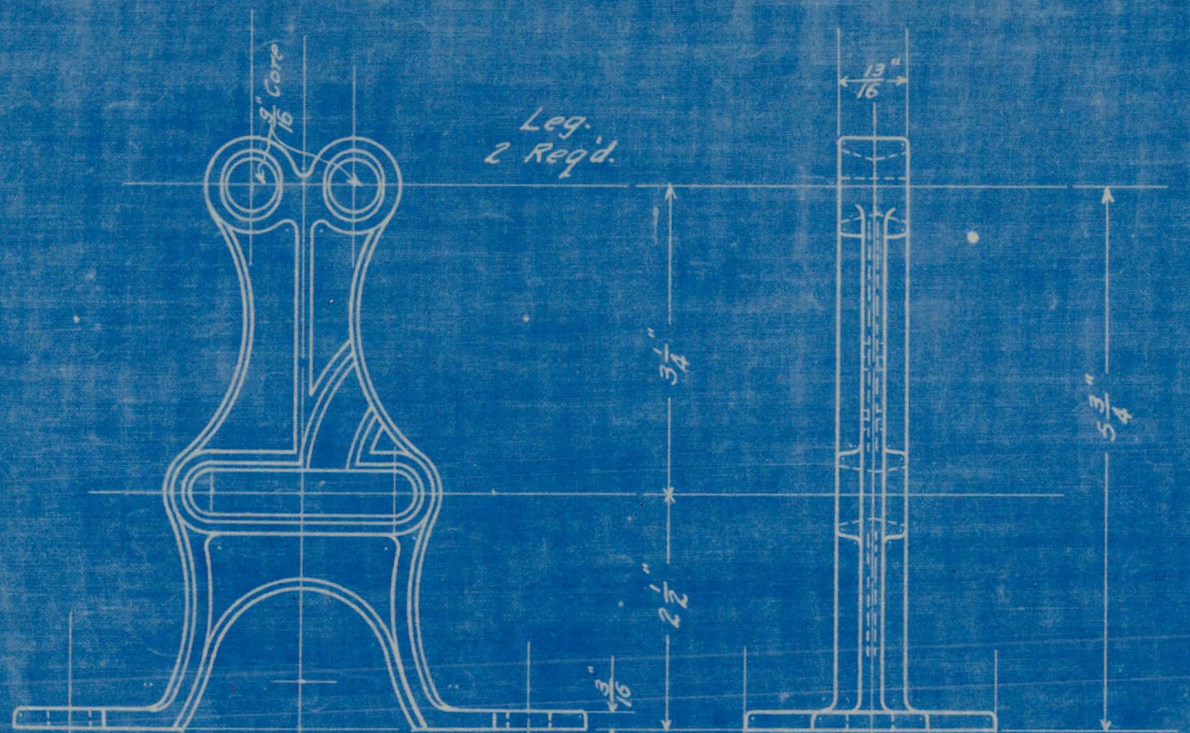
DRAWING - [redacted]
Office of Superintendent of Signals, A.C.L.R.R.Co.

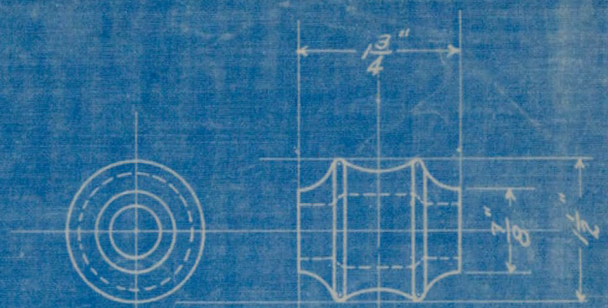
Drawn: August 30, 1910.
CAW.

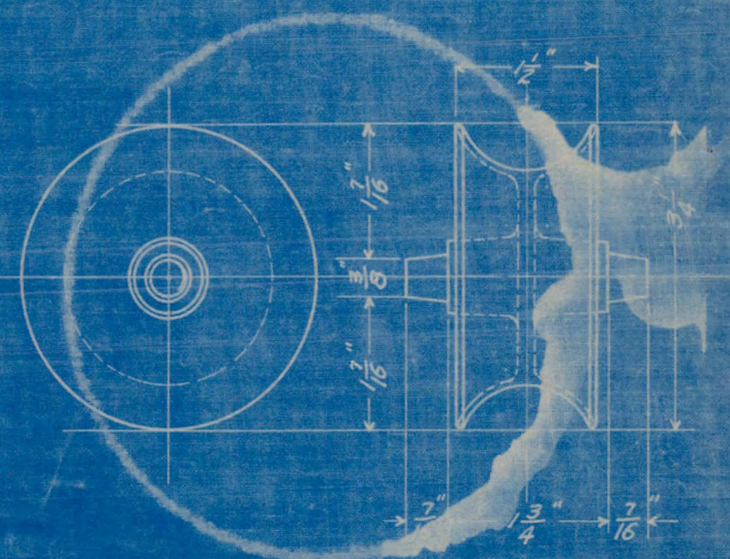
WOS A-93W
Jan. 29, 1929. A-94

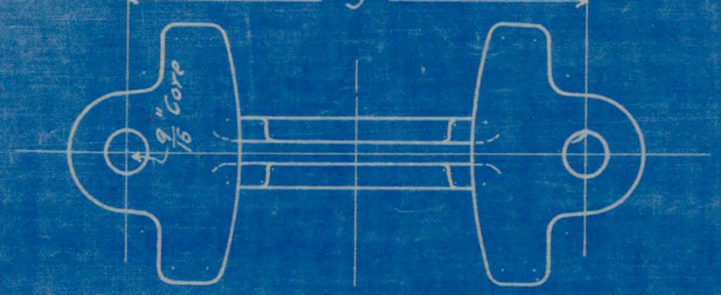
Sheet 3 of 3

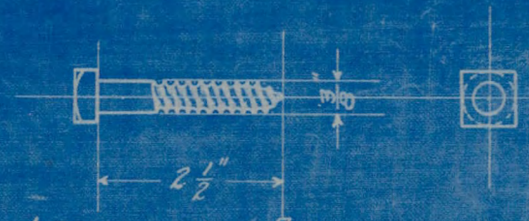
35053 BASTIEN & ES SIDE NEW YORK











A.C.L.R.R.

Std. universal anti-friction pipe carrier details.

Signal Engrs. Office Wilmington, N.C.

Approved Correct

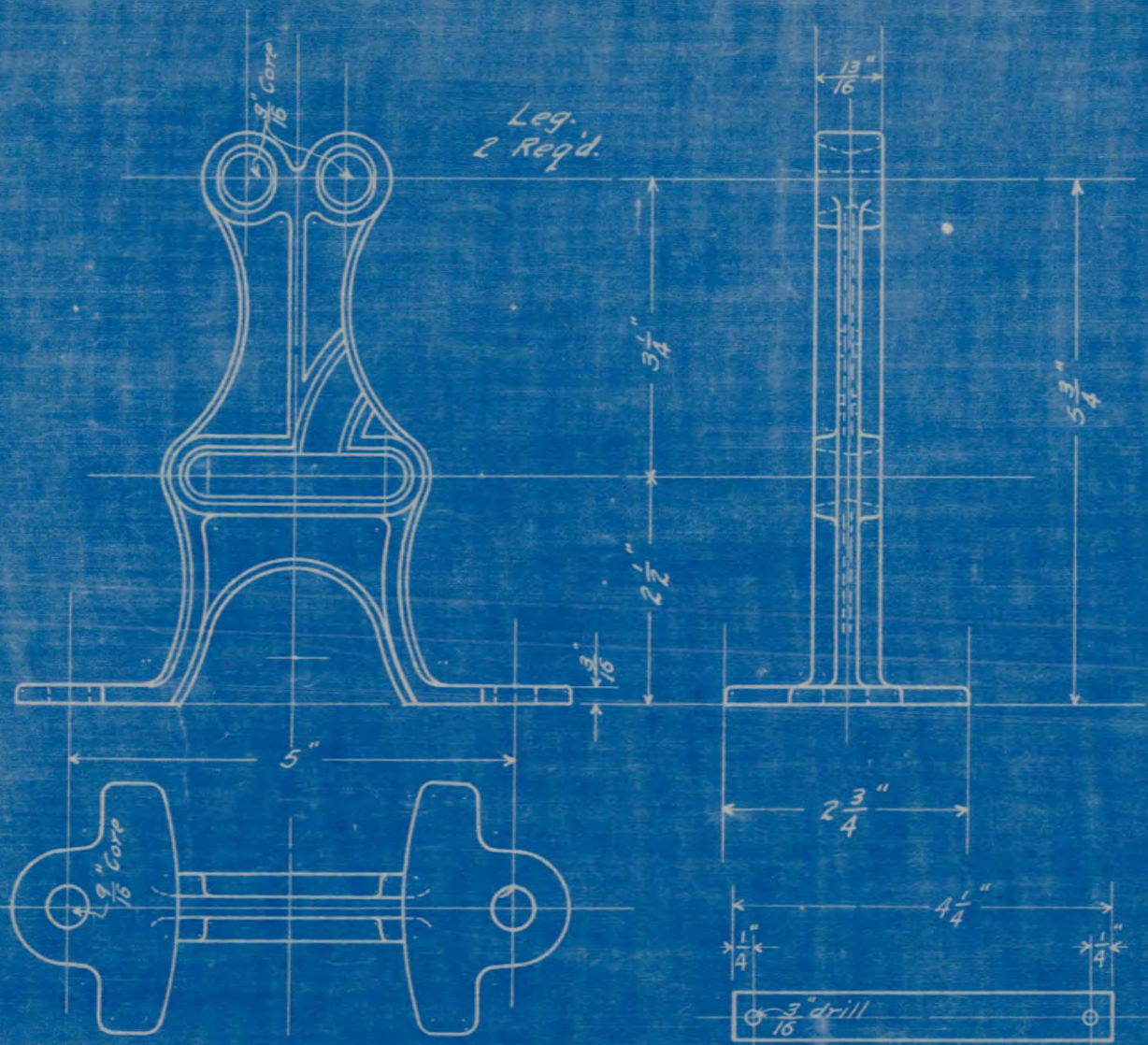
Chief Engr Signal Engr

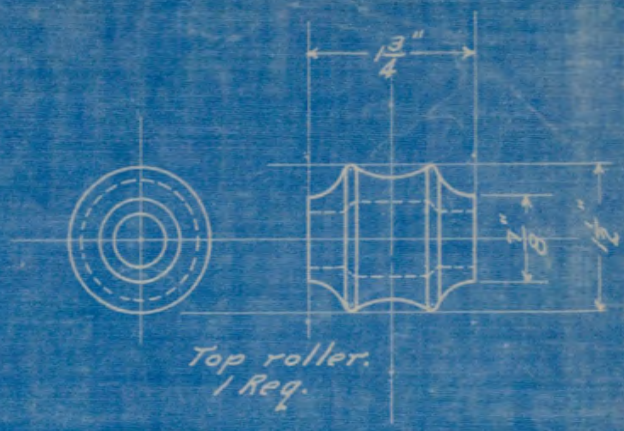
REVISED:- Lag screws were 2" long. 8-30-27.

Drawn C.A.W. Dec. 7, 1910.

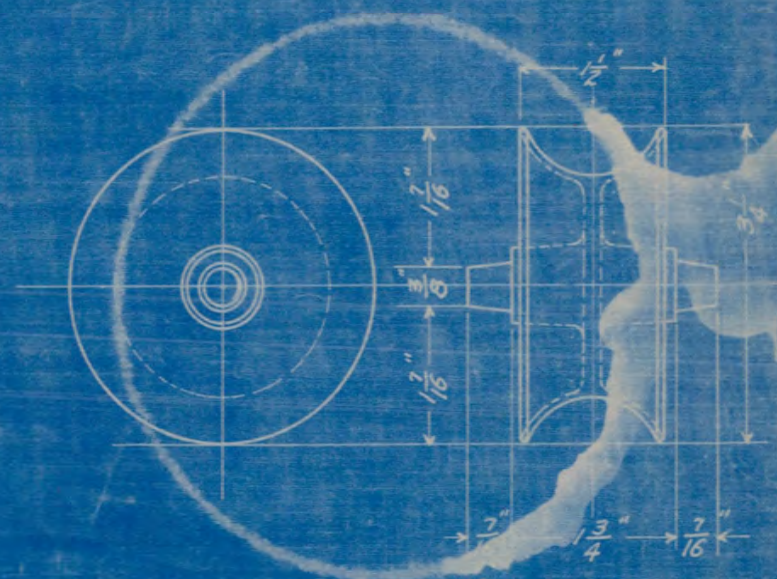
A— 98

Scale 6" = 12"

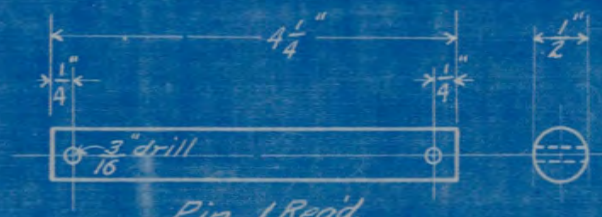




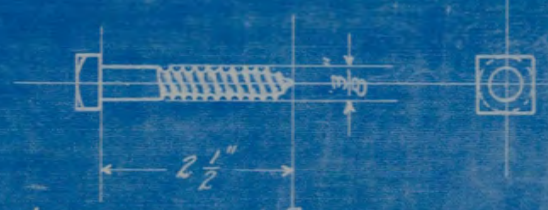
Top roller.
1 Req.



Bottom roller.
1 Req'd.



Pin. 1 Req'd.



Lag screw. 4 Req.

A.C.L.R.R.

Std. universal anti-friction pipe carrier details.

Signal Engrs. Office. Wilmington, N.C.

Approved" Correct

Chief Engr. Signal Engr.

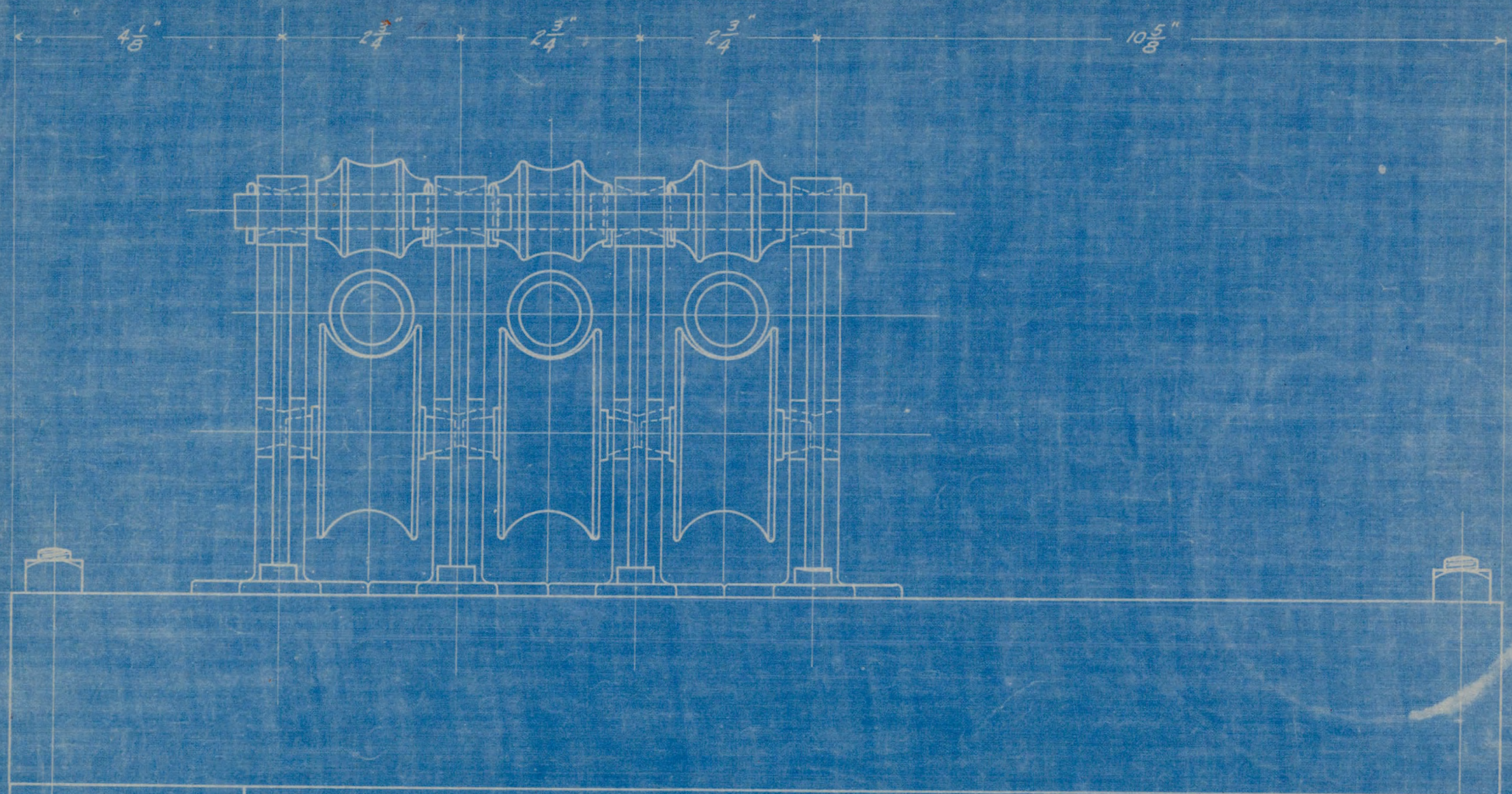
REVISED:- Lag screws were 2" long. 8-30-27

Drawn CAW. Dec. 7, 1910.

A — 98

Scale 6" = 12"

Sheet 1



A.C.L.R.R.

Std. universal anti-friction pipe carrier complete.

Signal Engr's. Office: Wilmington, N.C.

Approved _____ Chief Engr.

Correct

J. H. Galloway
Signal Engr.

Scale: 6" = 12"

Was A-99
Mar. 5, 1929

Drawn C.A.W.
Dec. 8, 1910.

A — 98

21"

1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8"

60°

1 1/4" 11/16" Corr.

1/8" 5/16" 11/16"

P.C. bar. 1 Req.

Moll. Iron.

9 1/2" Corr. 1 1/4"

1/16" 1 3/8" 1 3/8"

7/16"

1"

60°

9/16" Corr.

1 3/16"

9/16" Corr.

2 1/16" 3 1/4"

13/16"

1/2" bolt and nut. 2 Req.

1 1/2"

4 1/4"

1/4" 1/4" 1/2"

3/16" drill

Pin. 1 Req. 1/2" round iron.

1"

3/16"

Cotter. 2 Req.

6"

1/4" min.

A.C.L.R.R.

Std. transverse pipe carrier details.

Signal Engrs. Office Wilmington N.C.

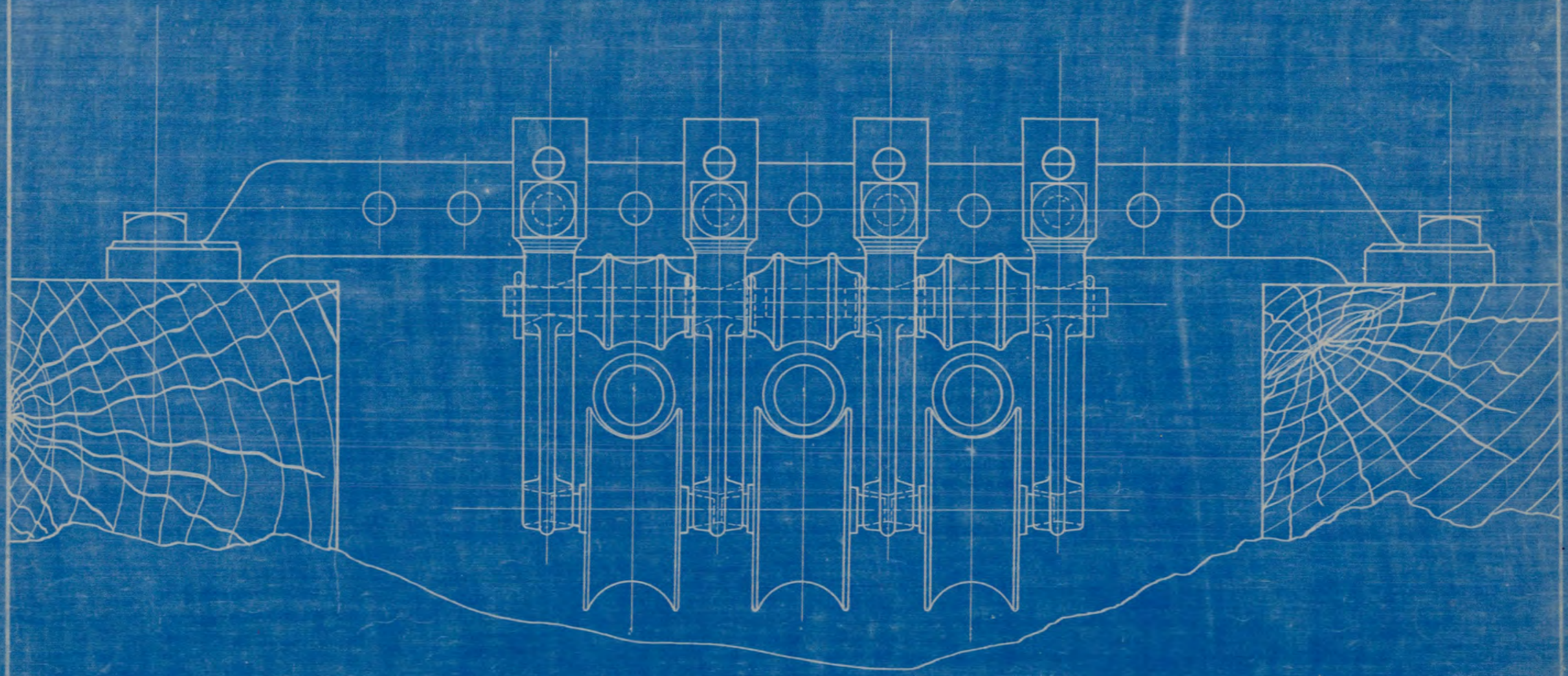
Approved Correct

Chief Engr Signal Engr

	Was A-81 Mar. 5, 1929	Revised size of lag screw and bolt. 8-30-27	Drawn C.A.W. Dec. 3, 1910.		A—88

Scale 6" = 12"

Sheet 3



Stilps 1 & 2 Way RSA Type
can be furnished in lieu of this.

A.C.L.R.R.

Std. transuerse pipe
carrier complete.

Signal Engrs Office. Wilmington N.C.

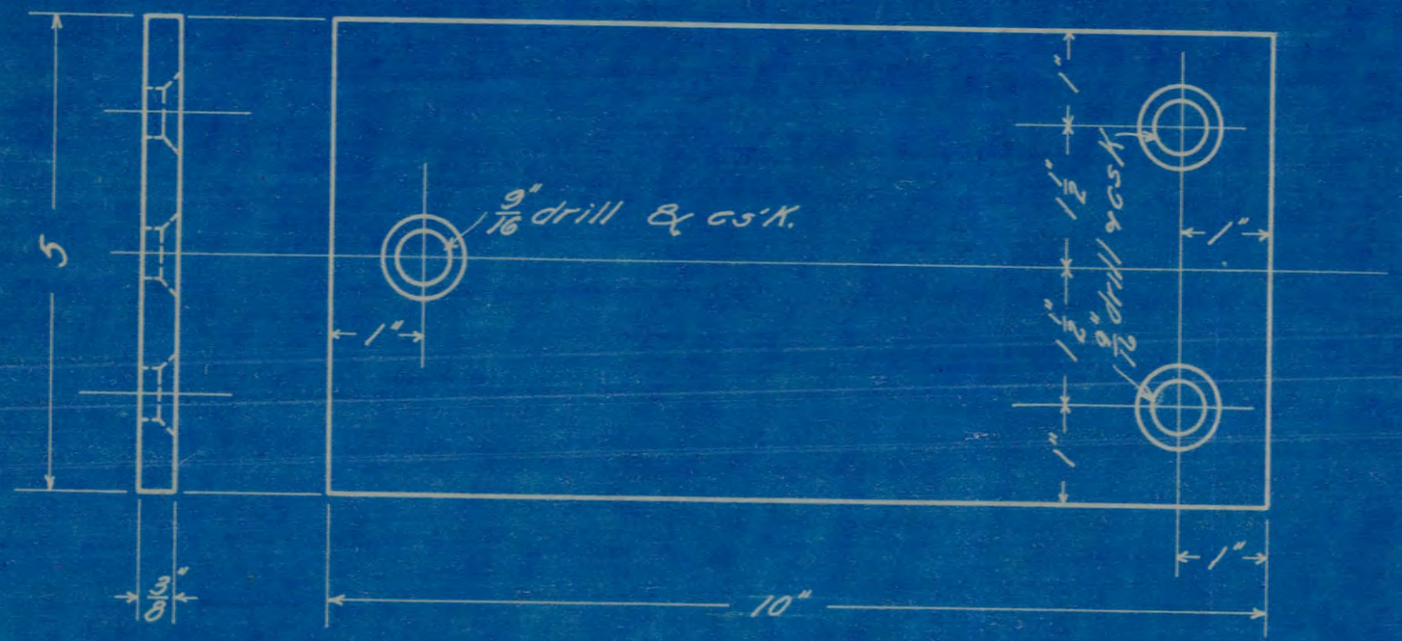
Approved Correct

Chief Engr. Signal Engr.

	Was A-108 Mar. 5, 1929	Drawn C.A.W. Dec. 6, 1910.		A—88

Scale 6" = 12"

Sheet 4



A.C.L.R.R.

Std. Riser Plate and Rivet

Signal Engrs. Office: Wilmington, N.C.

Approved: Chief Engr.

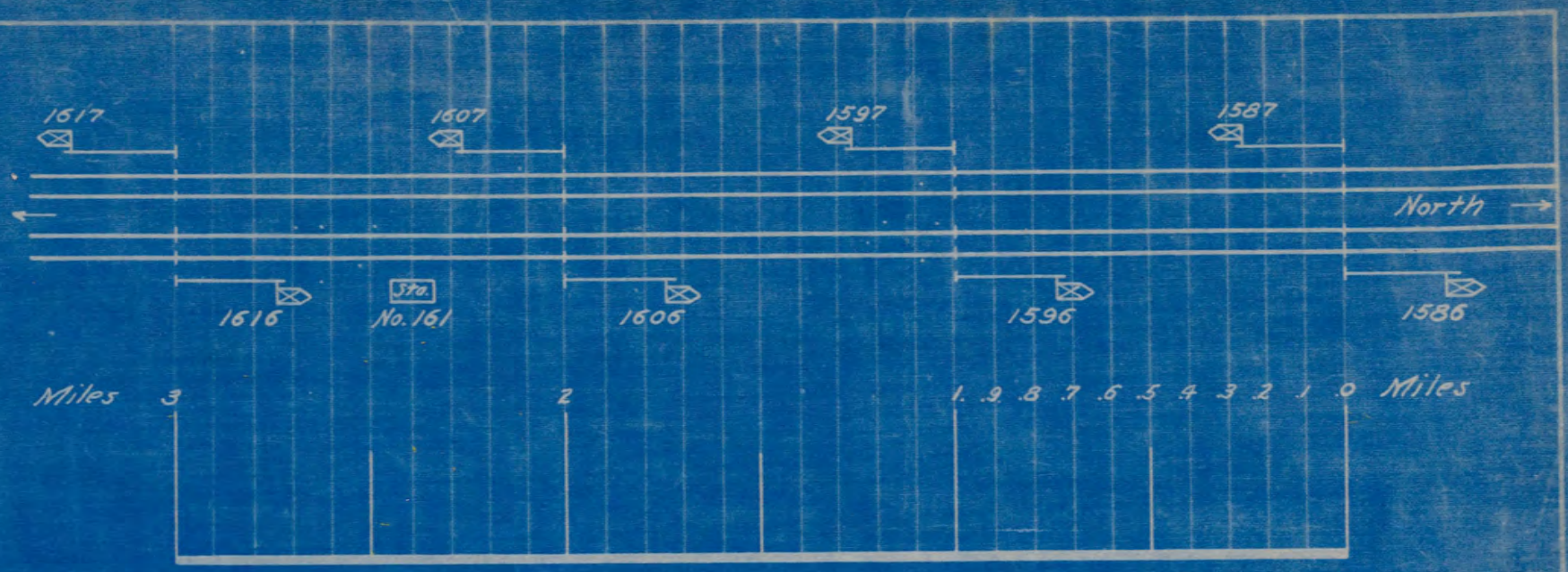
Correct: Supt. Signals.

Supersedes A104 of April 1, 1911

Drawn W.E.H. June 9th. 1925

A-104

Scale: ½ Size.



Notes:
Signals on Main Line numbered according to their distance in tenths of miles from the nearest Station number. Use even numbers for North and East bound signals and odd numbers for South and West bound signals.
Branch Lines will be designated by Station letters in addition to numbers.
See A-120 for Std. number plate.

A.C.L.R.R.

Std. method of numbering automatic signals.

Signal Engrs. Office. Wilmington. N.C.

Approved Chief Engr. Correct Signal Engr.

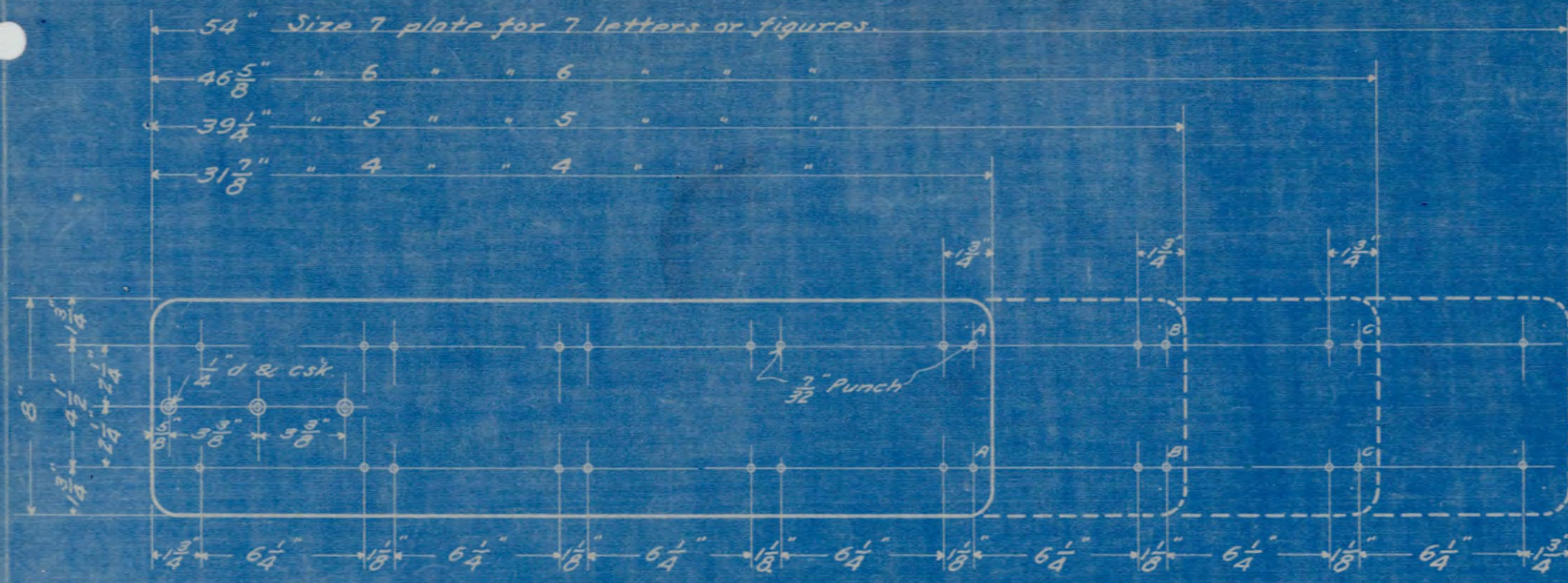
Scale

WAS A-121. FEB. 9, 29

Drawn C.A.P. Aug. 22, 1912.

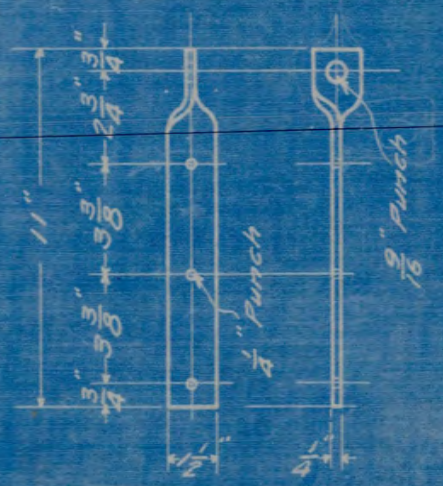
A—120

SHEET 1 OF 3 SHEETS

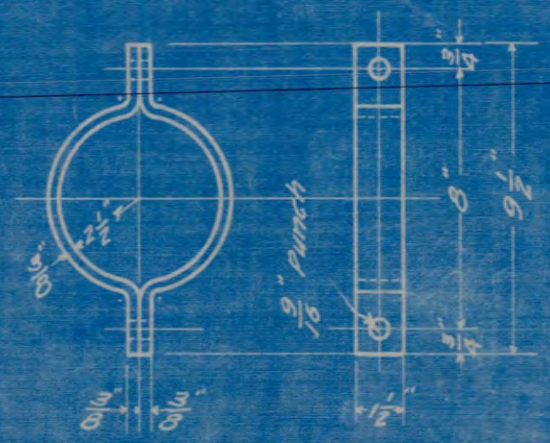


Note: Plates to be made out of #11 B.W.G. iron & sherardized. Plates to be painted black, on the ground.

Plate #1200, 31 7/8" long, drilled as shown except holes marked A Size 4
" 1201, 39 1/4" " " " " " " " " B " 5
" 1202, 46 5/8" " " " " " " " " C " 6
" 1203, 54" " " " " " Size 7



Hanger #1205



Strap #1206

Sq. Hd. bolt & nut. #1207

See A-155 for enameled figures and letters.

A.C.L.R.R.

Std. number plate for Automatic signals. Details.

Signal Engrs Office, Wilmington, N.C.

Approved Correct

Chief Engr. Signal Engr.

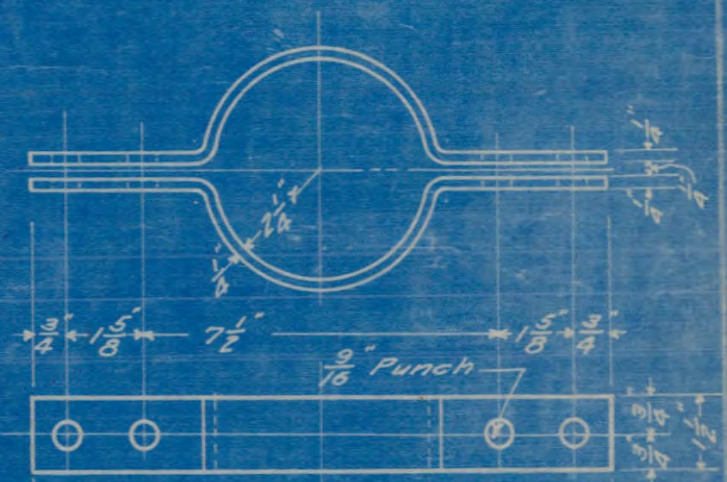
Supersedes A-120 of Mar. 31, 1911.	Drawn C.F.H. Nov. 17, 1916.		A—120

Scale 2" = 12"

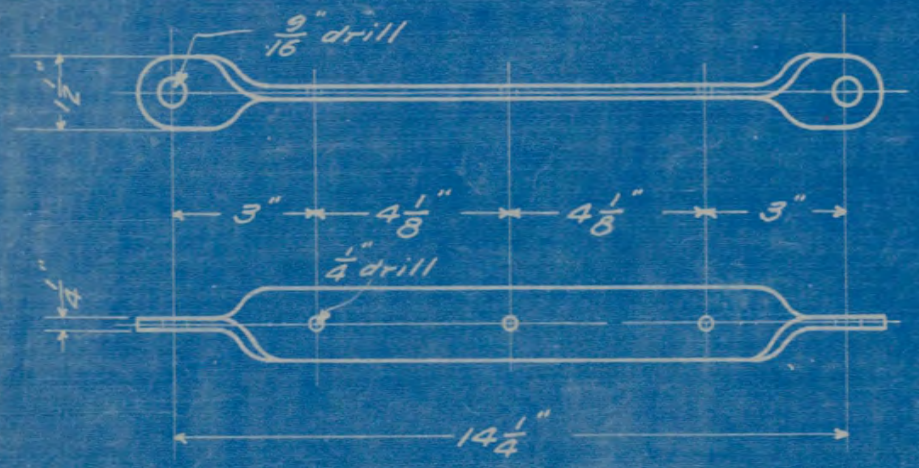
Note: Plate to be made out of #11 B.W.G. iron & sherordized. Plates to be painted black, on the ground.

Plate #1560, 25 3/8" long, drilled as shown except holes marked A Size 4
" 1561, 31" " " " " " " " B " 5
" 1562, 36 5/8" " " " " " " " C " 6
" 1563, 42 1/4" " " " " " Size 7

Note: Holes shown shaded, 1/4" d. & csk., spaced from ℄ of each plate.



Strap #1565



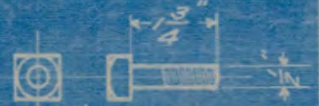
Hanger #1568

Filler #1567

Separater #1566

#10-30 x 1/2" R. Hd. brass machn. screw with nut. #1569

1/4" x 1" C.H. Rivet. #15601



Sq. Hd. bolt & nut. #15602

Scale 3" = 12" & 2" = 12"

WAS A-156. FEB. 9, 29

A.C.L.R.R.

Std. number plate for street crossing alarms. Details.

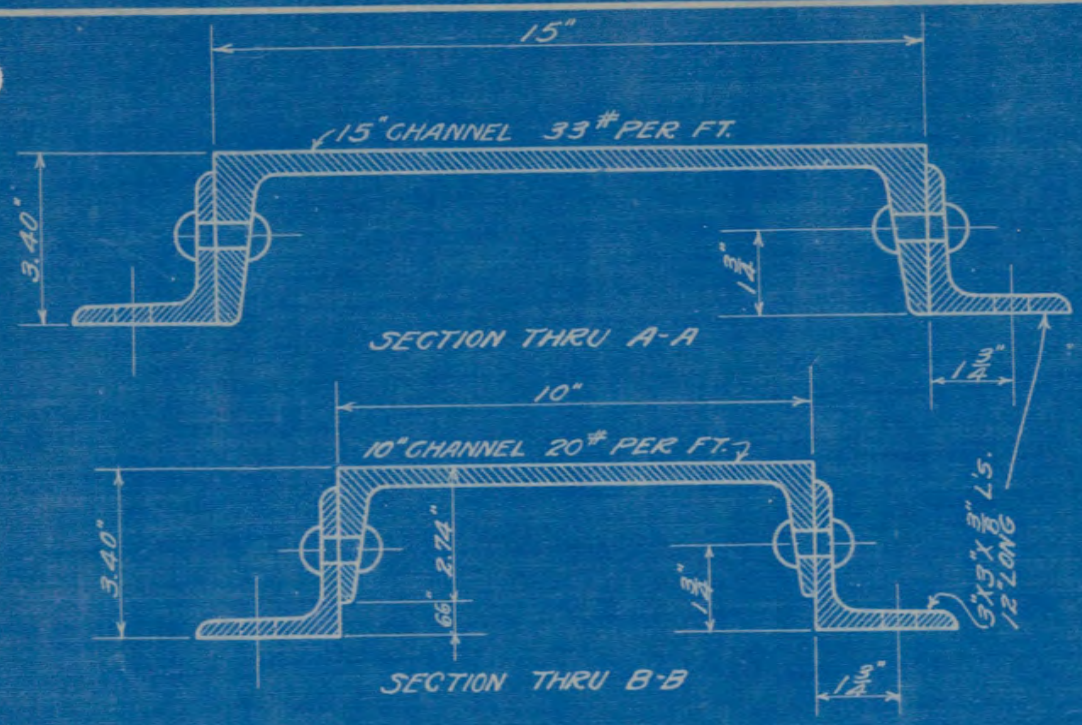
Signal Engrs. Office Wilmington N.C.

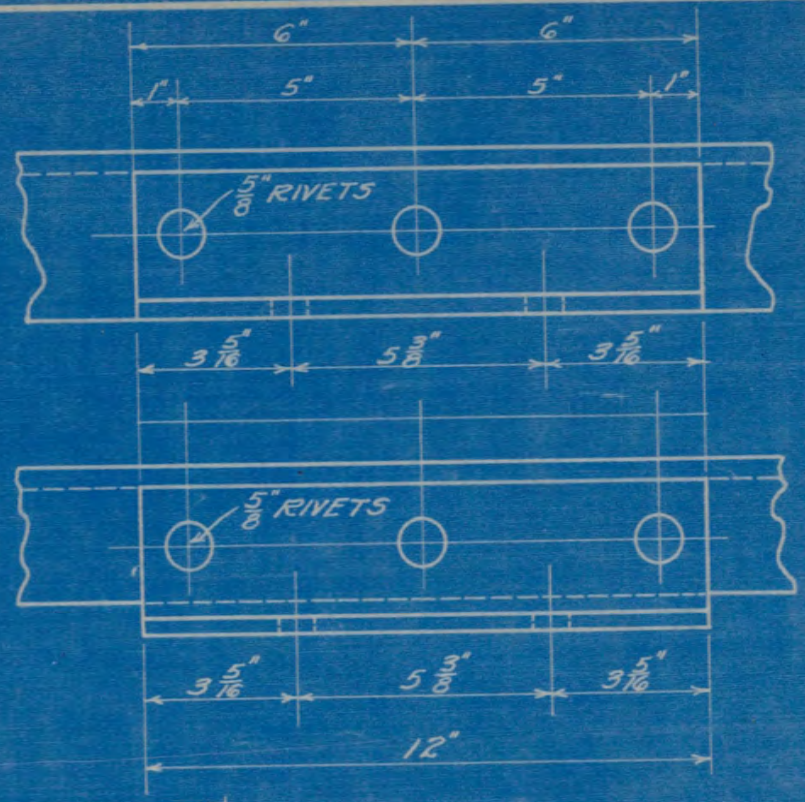
Approved Chief Engr.

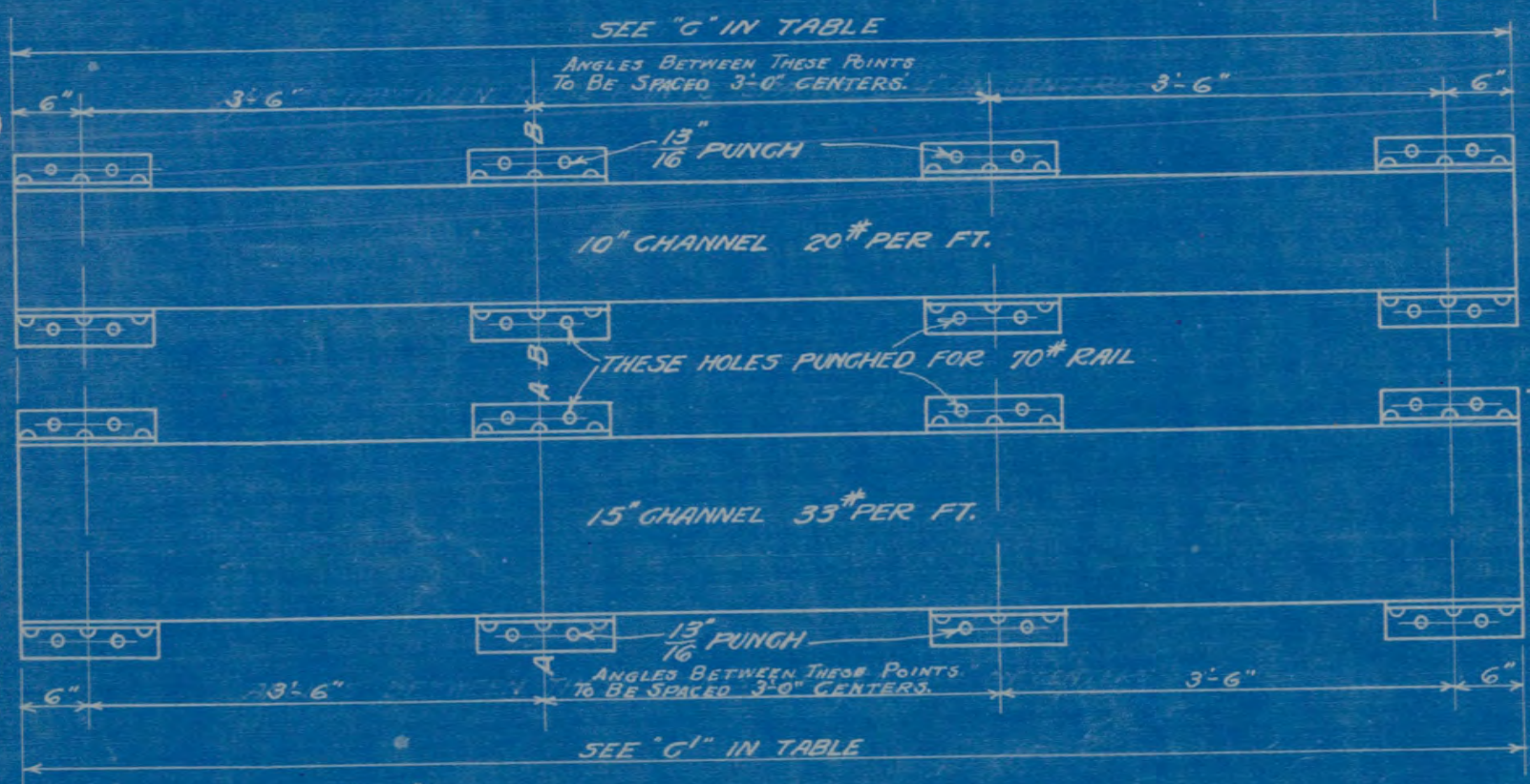
Correct Signal Engr.

Drawn Nov. 16, 1916.

A-120







NOTE: 3/4" X 2 1/2" BOLTS REQ'D. FOR CHANNELS AND STANDS.

SIZE OF TOWER	"C" OR "C'"	NUMBER OF 3"X3"X3/8" L's. REQ'D.
8 LEVERS	8'-0"	6-3 TO SIDE
16 "	11'-0"	8-4 " "
24 "	14'-0"	10-5 " "
32 "	17'-0"	12-6 " "
40 "	20'-0"	14-7 " "
48 "	23'-0"	16-8 " "
	"	

A.C.L.R.R.
CHANNELS
FOR LEADOUT CONSTRUCTION

Signal Engrs. Office Wilmington N.C.

Approved Correct

Chief Engr SUPT. OF SIGNALS

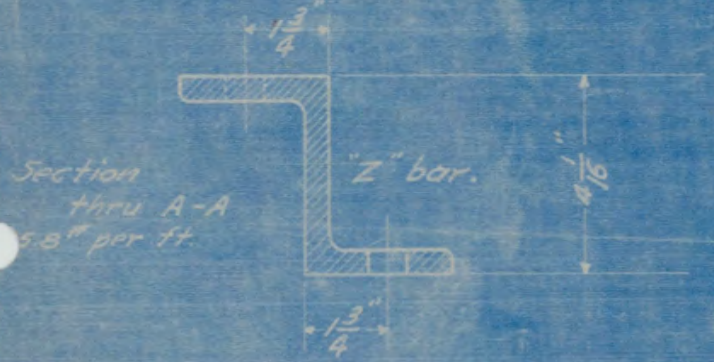
SUPERSEDES A-122 OF OCT. 20, 1911.

Drawn WEH
JAN. 5, 1928.

A-122

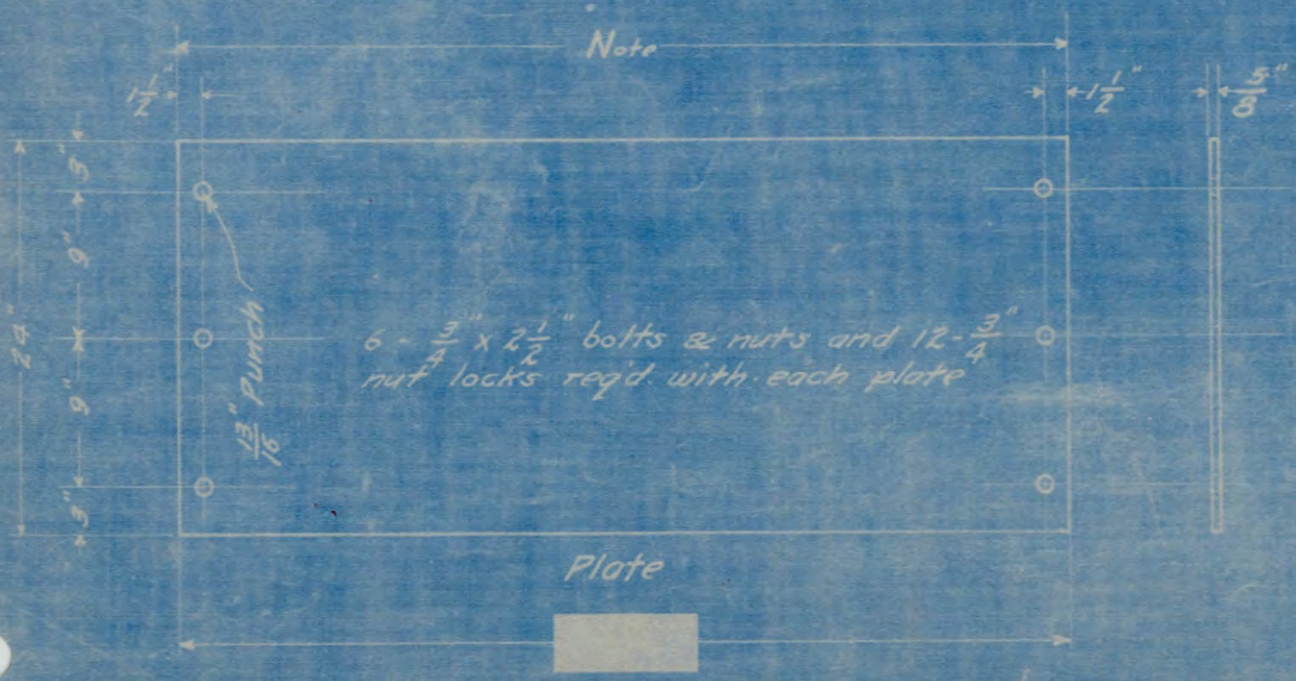
Scale 3/4 & 3" = 12"

Note: Number of punchings each side of hole "x" to be equal, and spaced as shown. Hole "x" to be in center of Z bar.



Note:
Plate to be 22" long for first deflector. For each additional pipe, 2 3/4" must be added to this length.

Size of Tower	"B"	"C" Holes Req'd.	Plates Req'd
16 Levers.	11'-0"	15 Spaced as shown.	5
24 "	14'-4"	21 "	7
32 "	17'-8"	27 "	9
40 "	21'-0"	31 "	10
48 "	24'-4"	37 "	12
56 "	27'-8"	41 "	13
64 "	31'-0"	45 "	15



Scale 1" = 12"

Was A-126
Jan. 26, 1929.

A.C.L.R.R.

Std. "Z" bar and plate for lead-out construction.

Signal Engrs. Office Wilmington N.C.

Approved

Correct

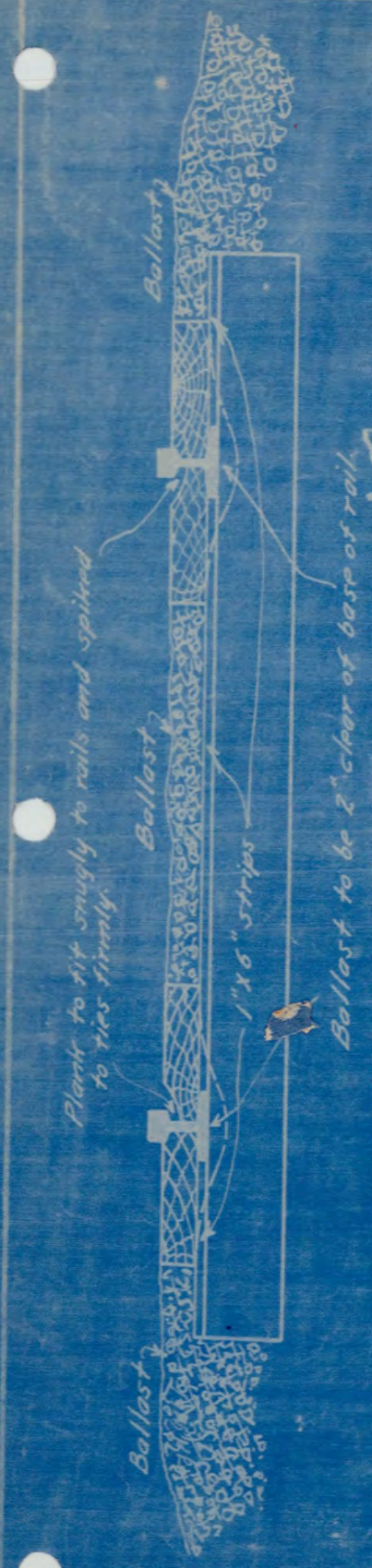
Chief Engr.

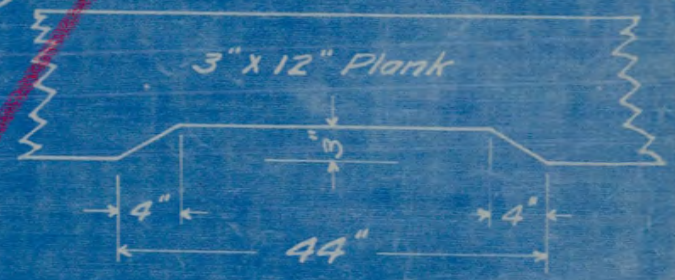
Signal Engr.

East

Jan. 14, 1912.

A 122





Note: Where tr'ks. are bonded in street crossing, planking must be cut out as above.

A.C.L.R.R.

Std. planking and grading around station tr'ks.

Signal Engrs. Office Wilmington N.C.

Approved Correct

Chief Engr. Signal Engr.

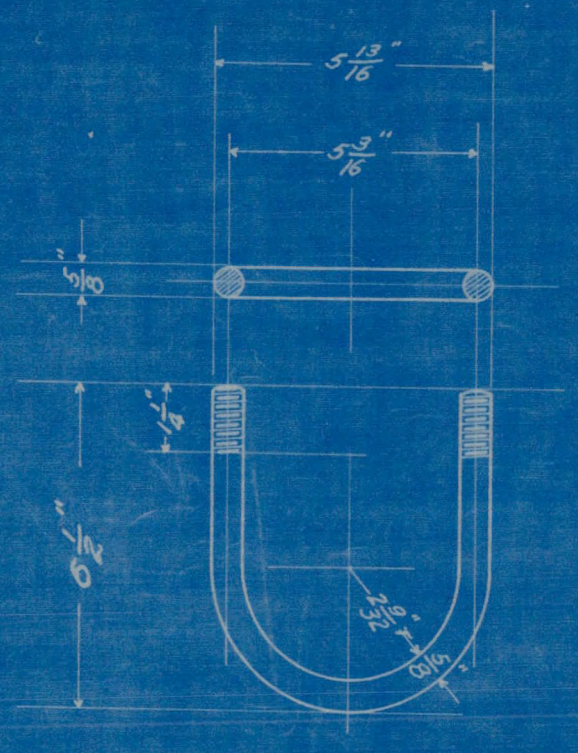
Scale $\frac{3}{4}$" = 12"

All planking & strips to be Pecky Cypress.

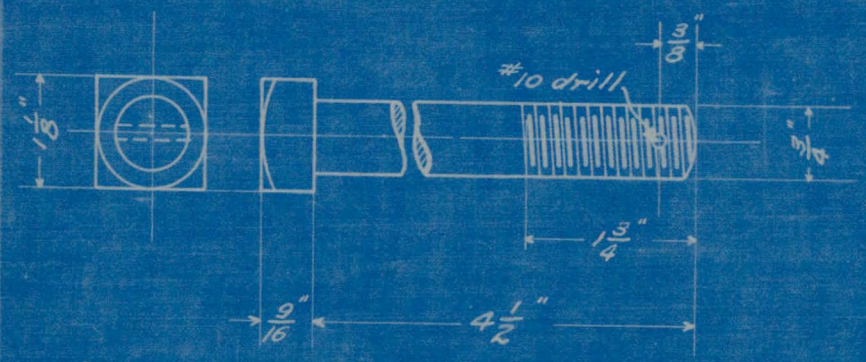
Revised 5-12-13.

Drawn July 27, 1911.

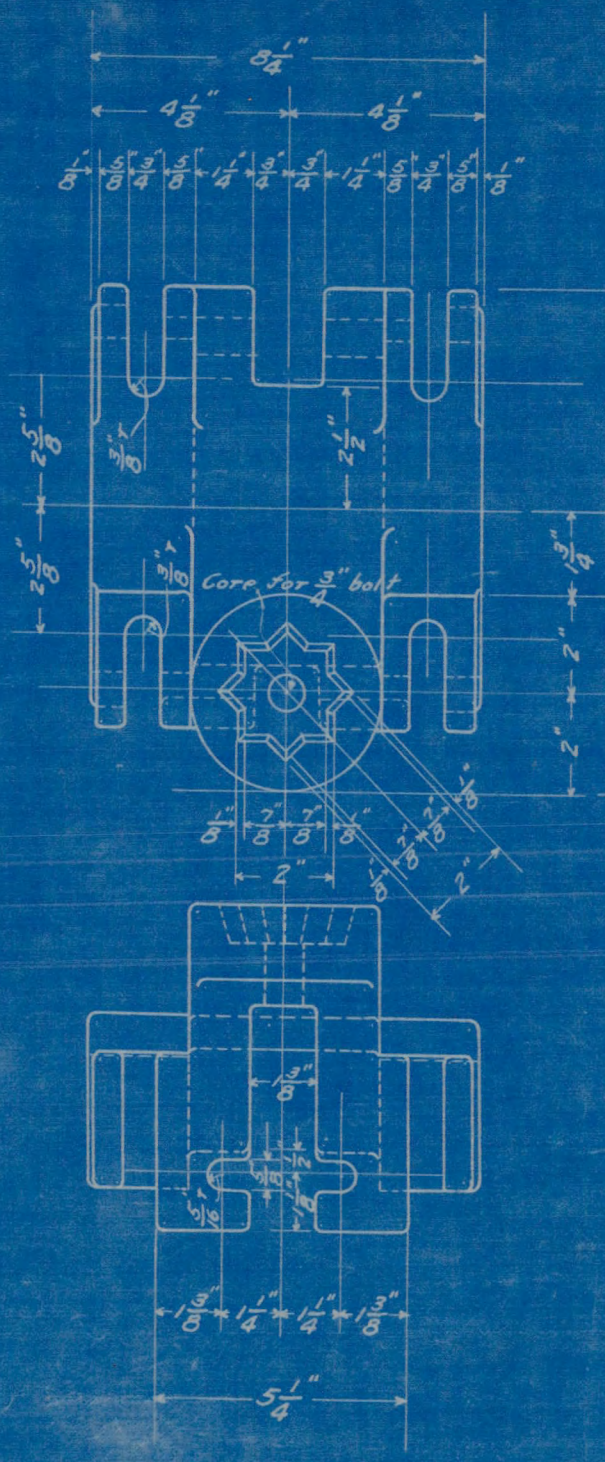
A-125



U bolt for 4" pipe.
2 Req'd.

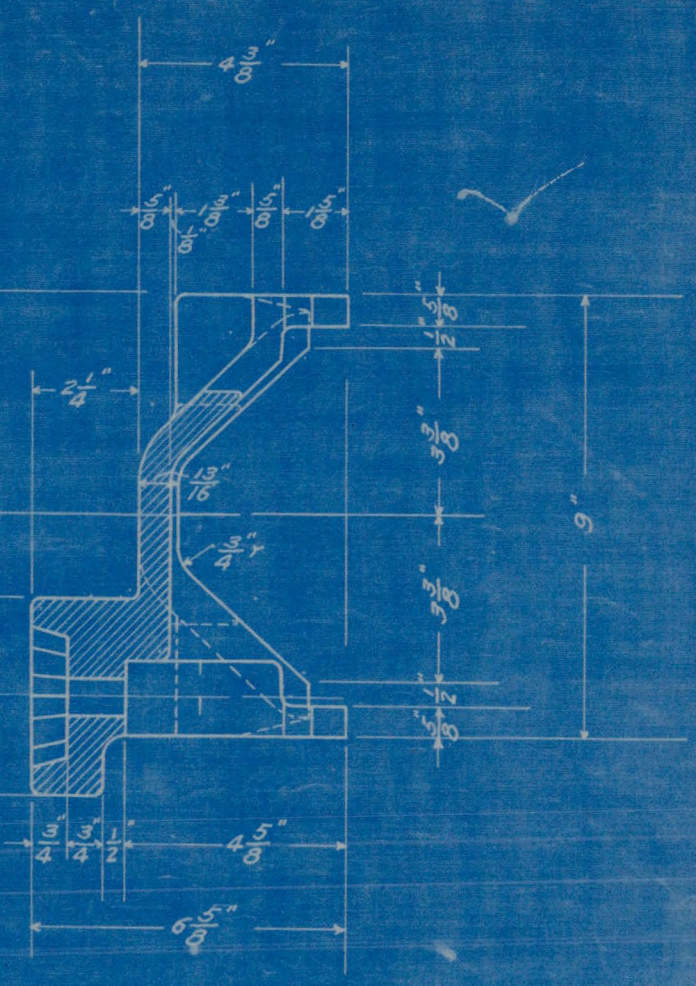


Made from std. 3/4" bolt. 1/2 size.



Bearing for 4" pipe, adaptable for 5" and 6" pipe.
Cast Iron.

Revised 4-13-17



A.C.L.R.R.

Std. bearing for fixed signals. Details.

Signal Engrs. Office Wilmington, N.C.

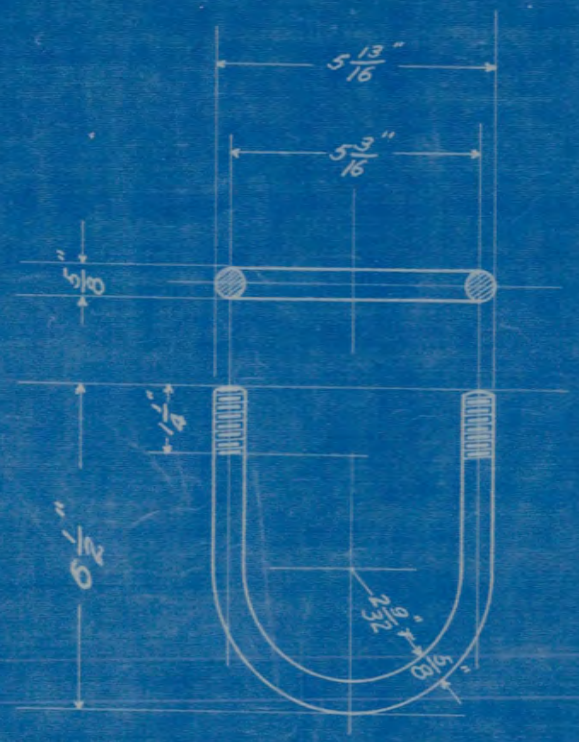
Approved _____ Chief Engr.

Correct J. Kilowey Signal Engr.

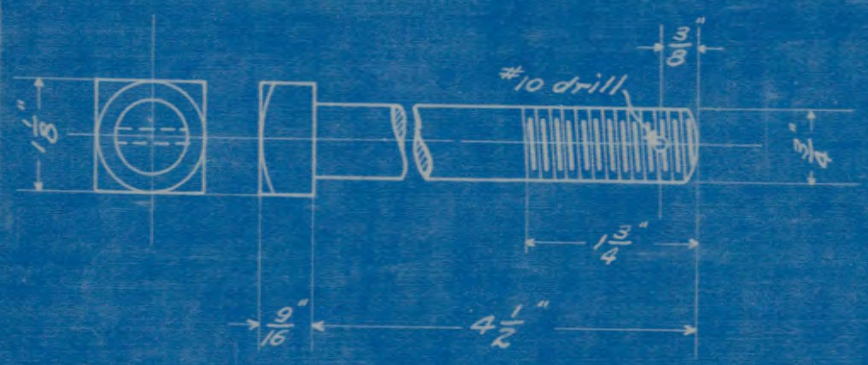
Drawn [illegible] Mar. 20, 1913.

A—128

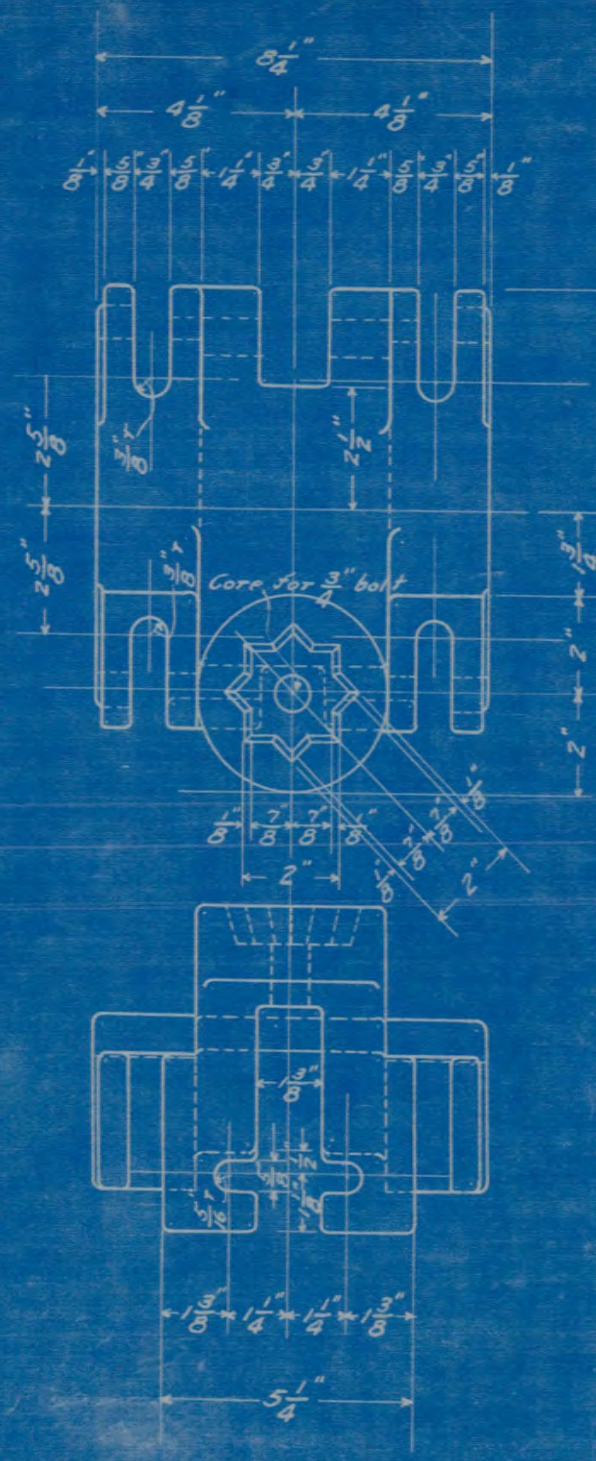
Scale 3"=12"



U bolt for 4" pipe.
2 Req'd.

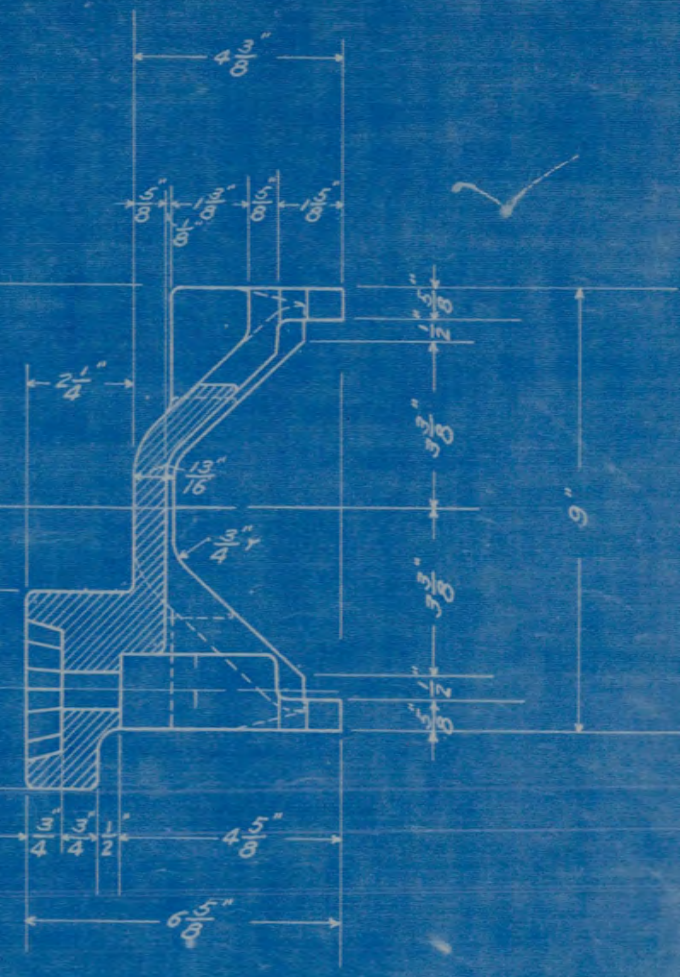


Made from std. 3/4" bolt. 1/2 size.



Bearing for 4" pipe, adaptable for 5" and 6" pipe.
Cast Iron.

Revised 4-13-17



Scale 3"=12"

A.C.L.R.R.

Std. bearing for fixed signals. Details.

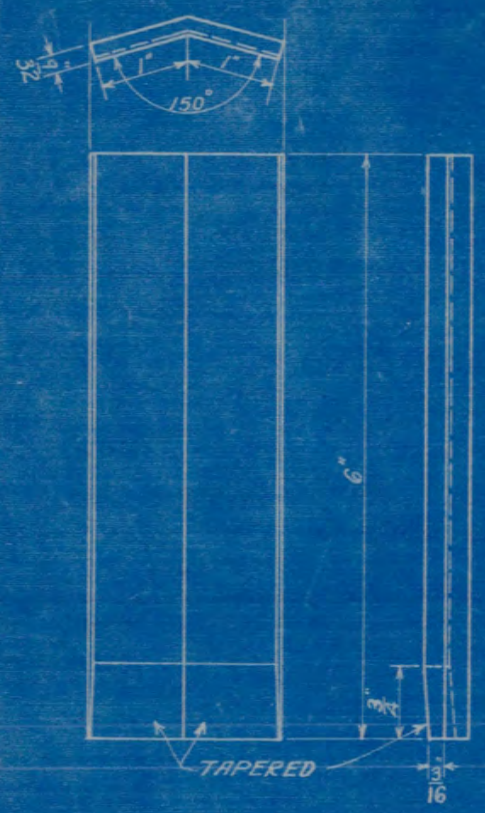
Signal Engrs. Office, Wilmington, N.C.

Approved _____ Correct _____

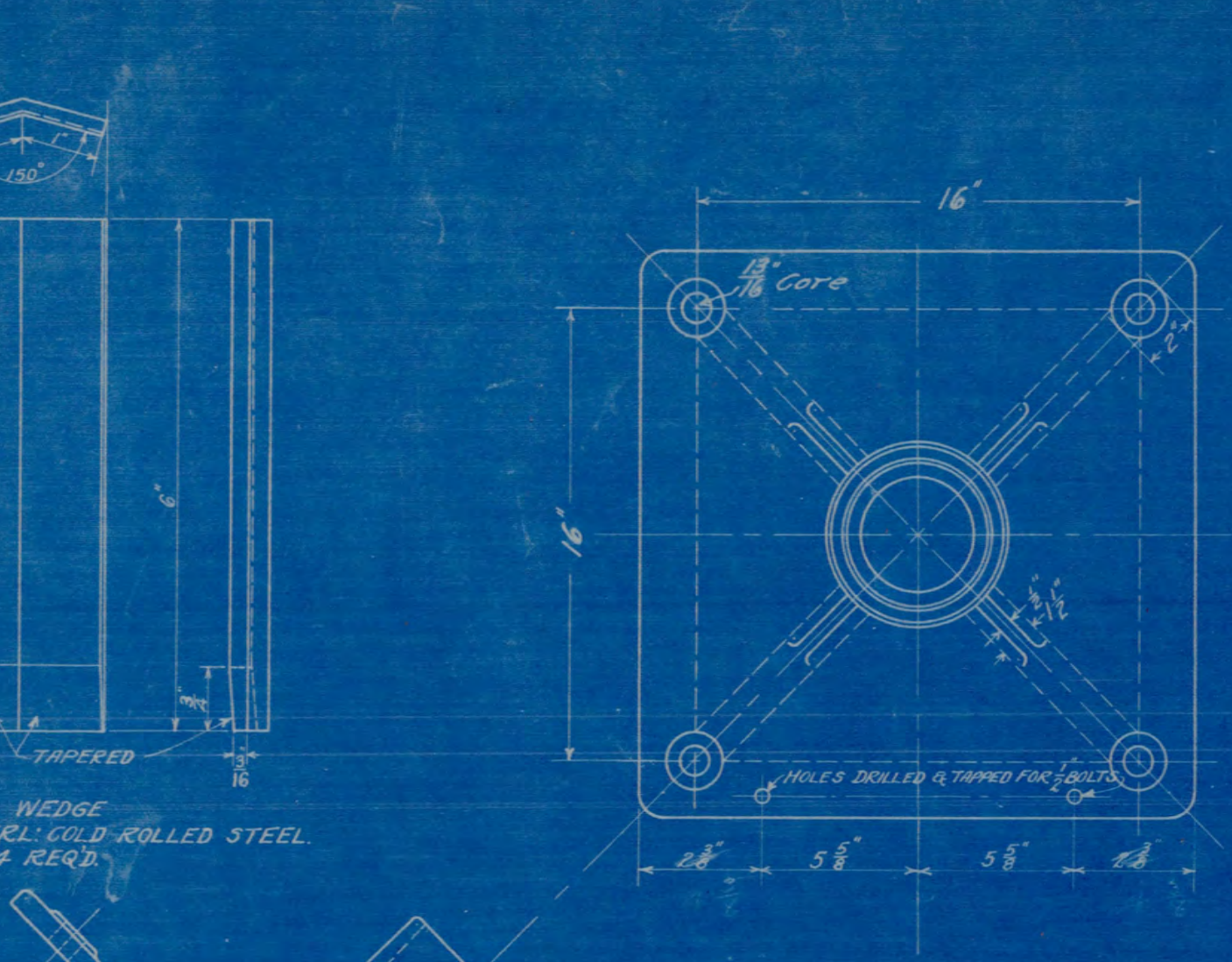
Chief Engr. _____ Signal Engr. J. Killoway

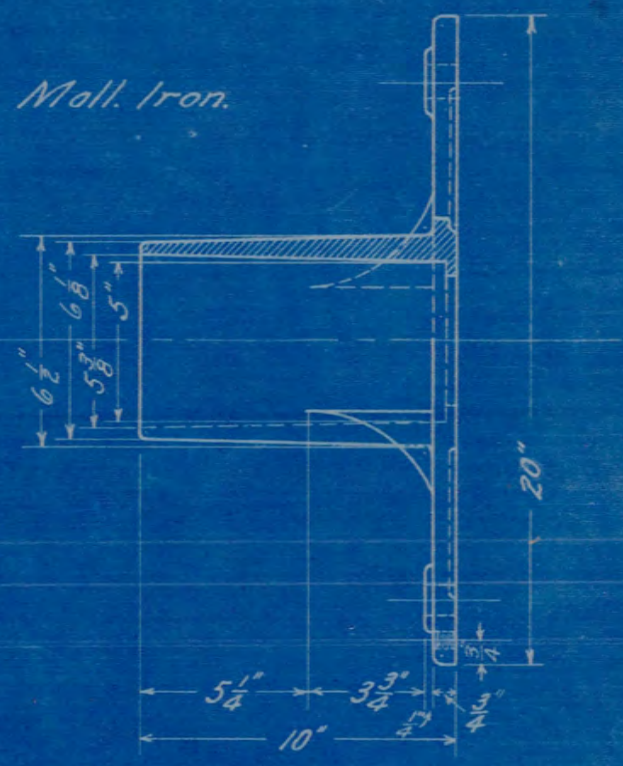
Drawn A.K.W. Mar. 20, 1913.

A—128



WEDGE
MATRL: COLD ROLLED STEEL.
4 REQ'D.





A.C.L.R.R.

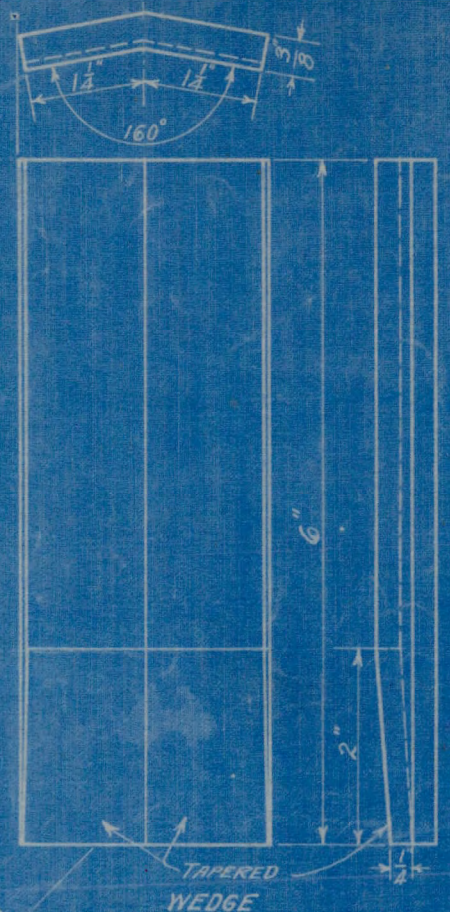
St'd. iron base for 4" Signal Pole.

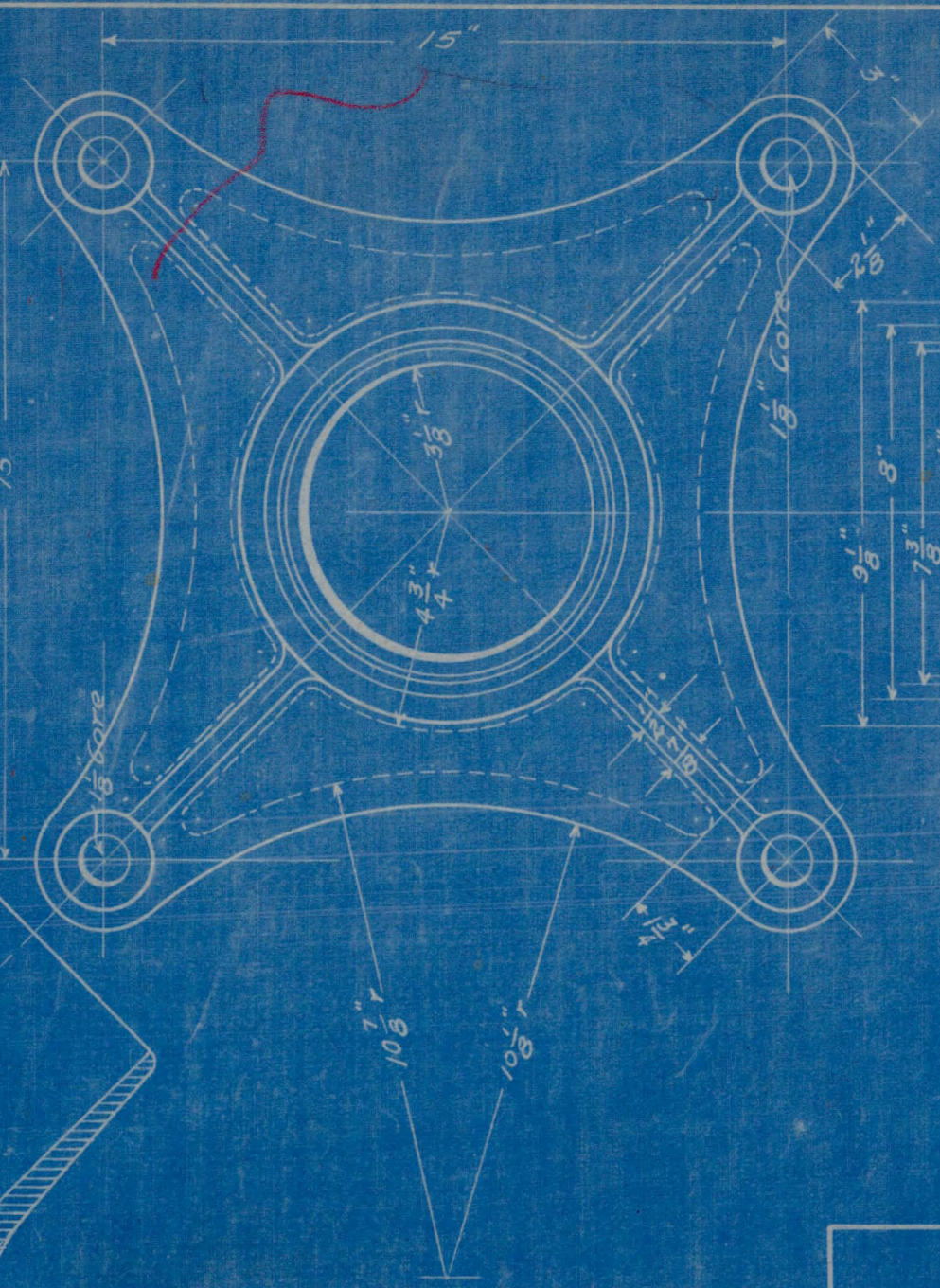
Signal Engrs. Office: Wilmington, N.C.

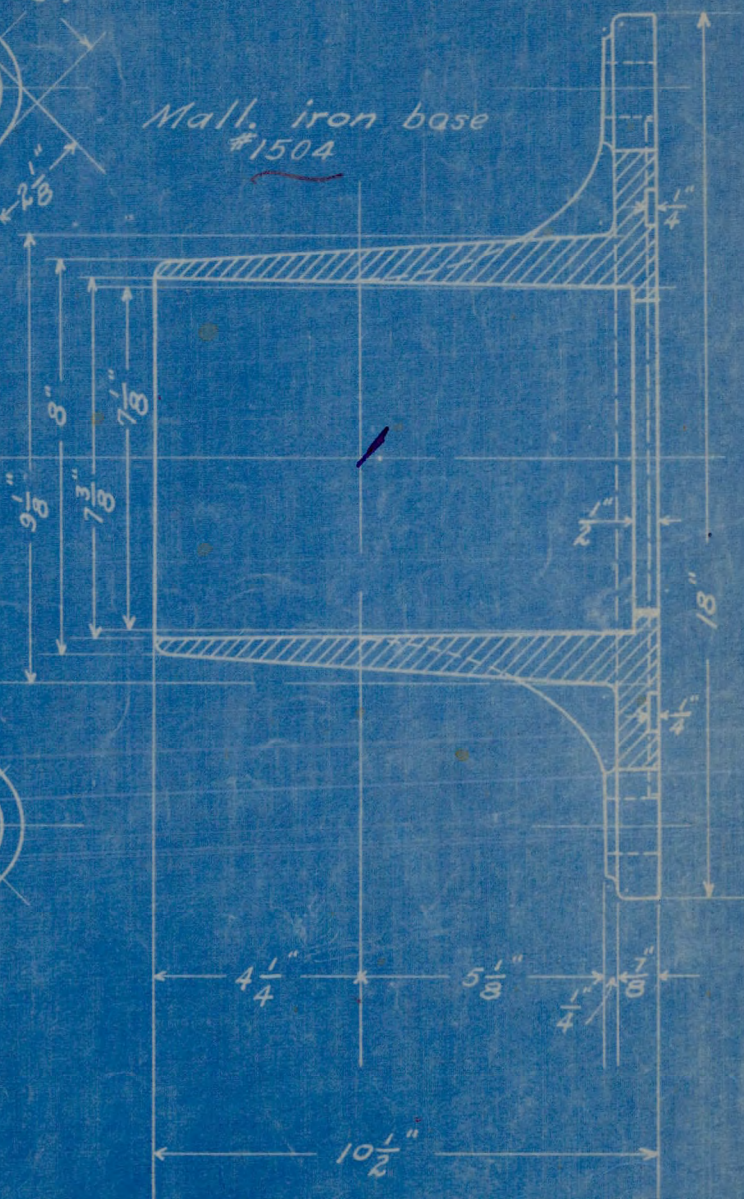
Approved _____ Chief Engr.

Correct _____ Supt. Signals.

Scale 2" = 12"	WEDGE ADDED. FEB. 11, 1929.	REVISED: BASE OVER ALL WAS SHOWN 18". 2-13-28.	Bolt hole centers changed. Size of bolt holes ". 4-8-26	Revised: Hole centers one side were shown 16". 4-1-26.	Drawn W.E.H. Nov. 14, 1924.	A-133







A.C.L.R.R.

Std. iron base for 6" signal poles.

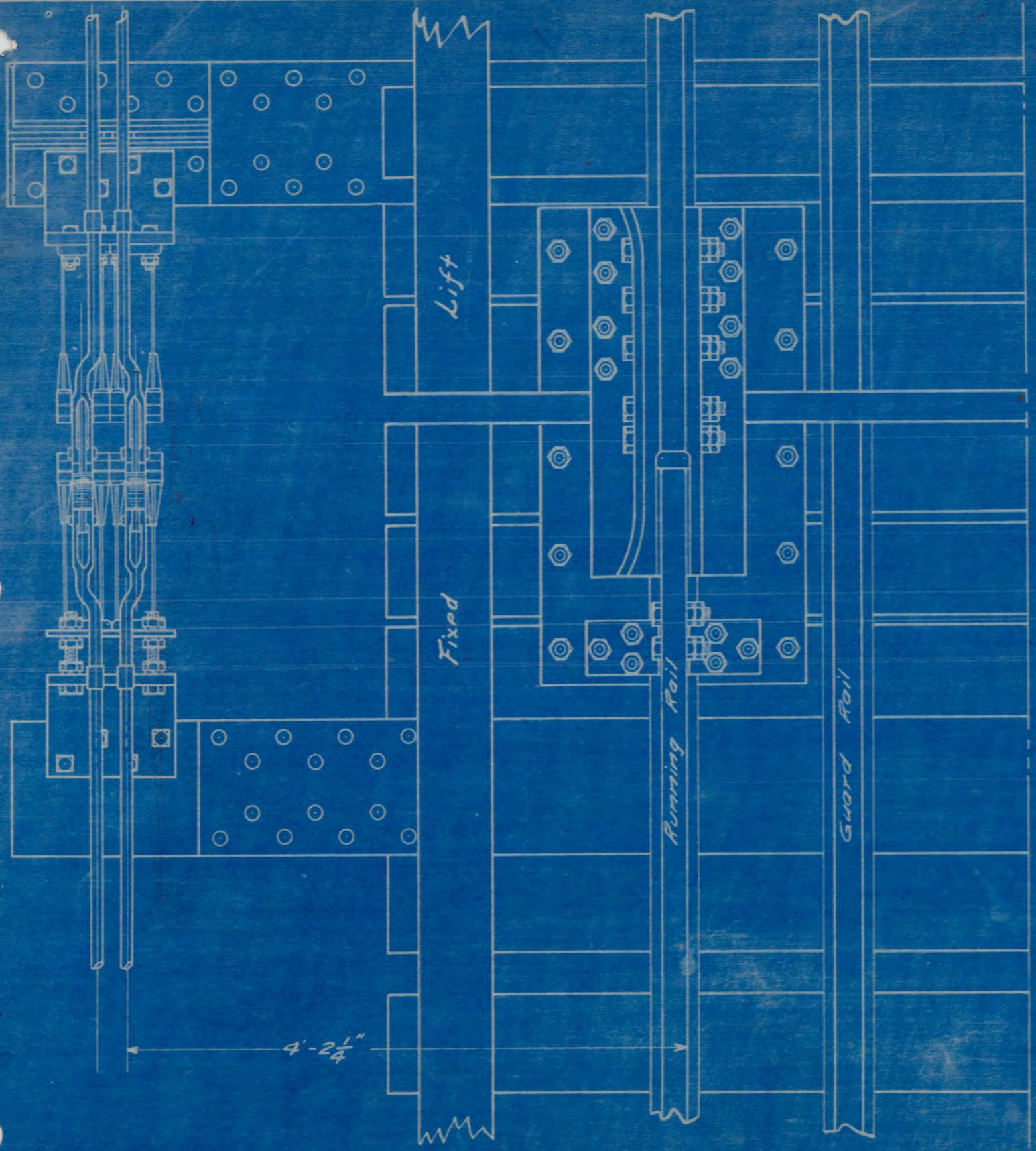
Signal Engrs. Office: Wilmington, N.C.

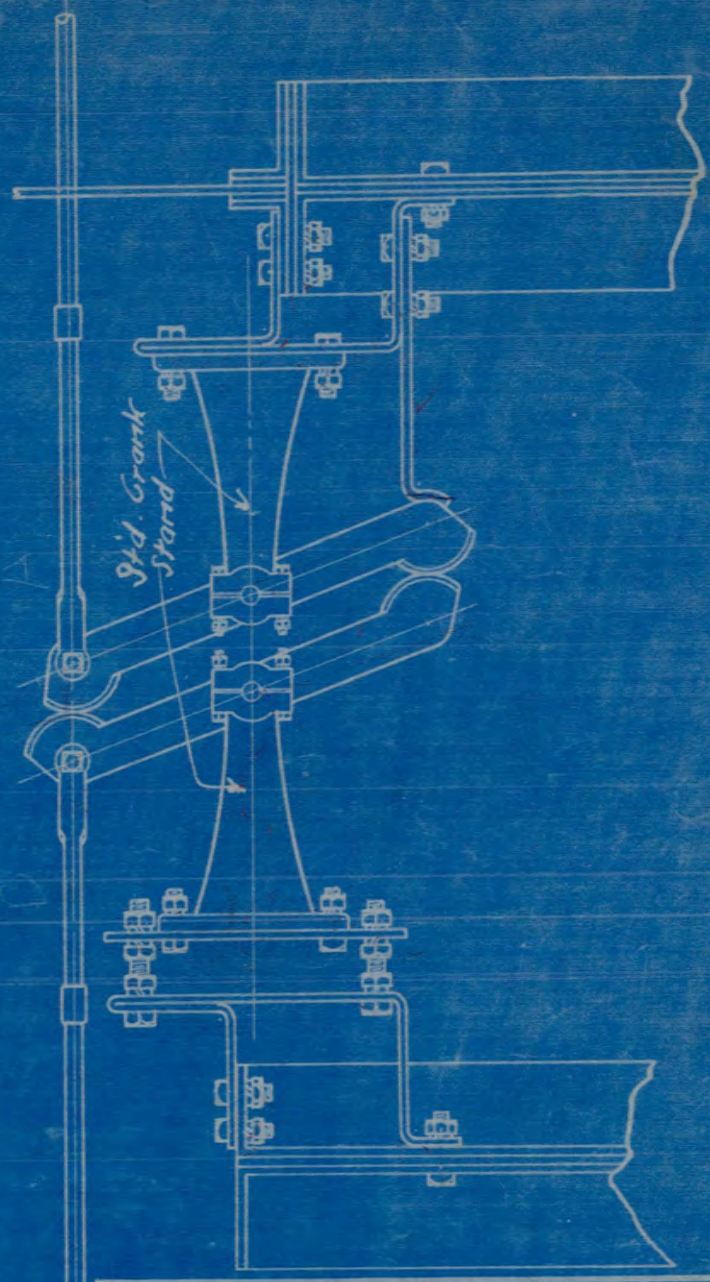
Approved E.B. Stevens, Chief Engr.

Correct A.H. Galloway, Signal Engr.

WEDGE ADDED. WAS A-13. FEB. 13, 29.	Drawn C.G.W. Mar. 19, 1909.		A-133

Scale 3" = 1'





Atlantic Coast Line RR.

Std. Assembly - Universal Coupler for lift bridges.

Signal Engr. Office: Wilmington, N.C.

Approved Correct

Chief Engr. Signal Engr.

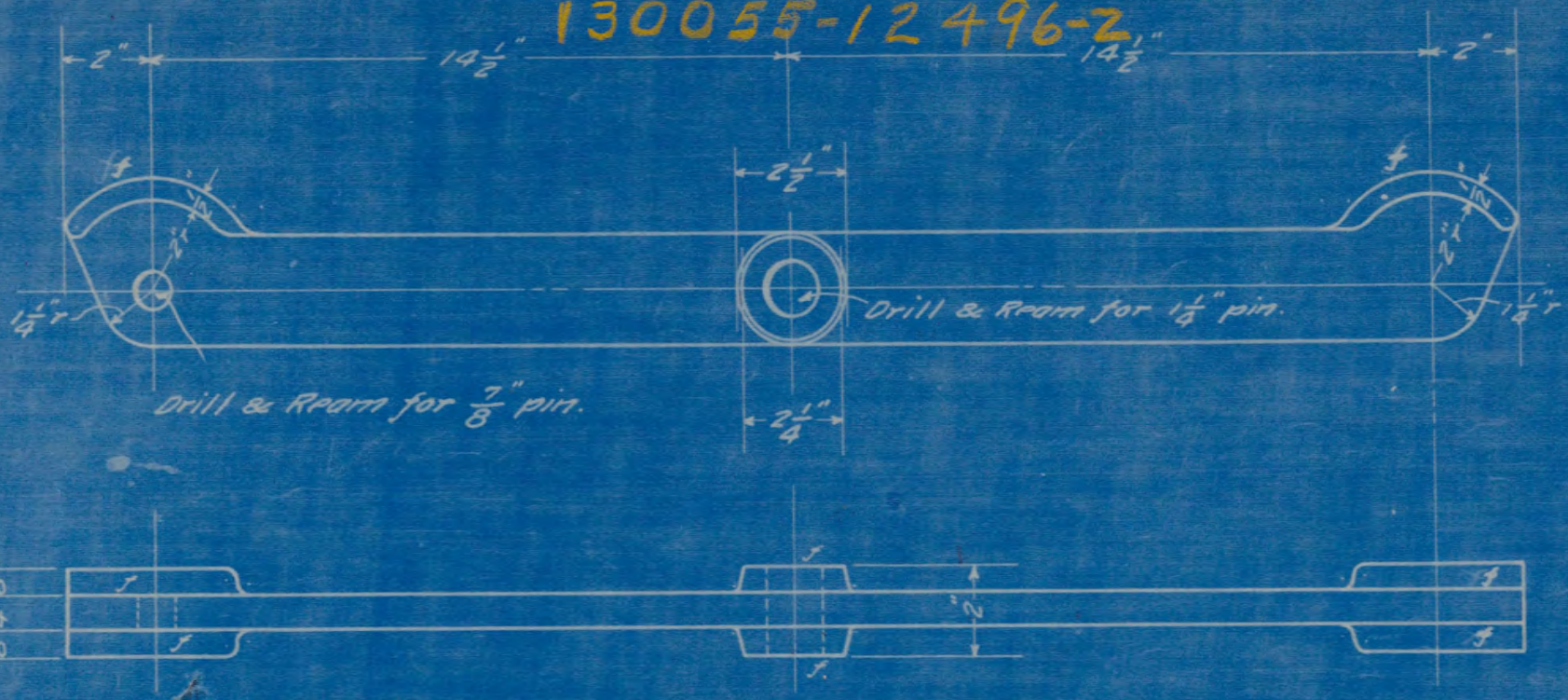
Drawn C.W.H.
Dec. 29, 1914.

A-142

Sheet 1 of 3

"A"

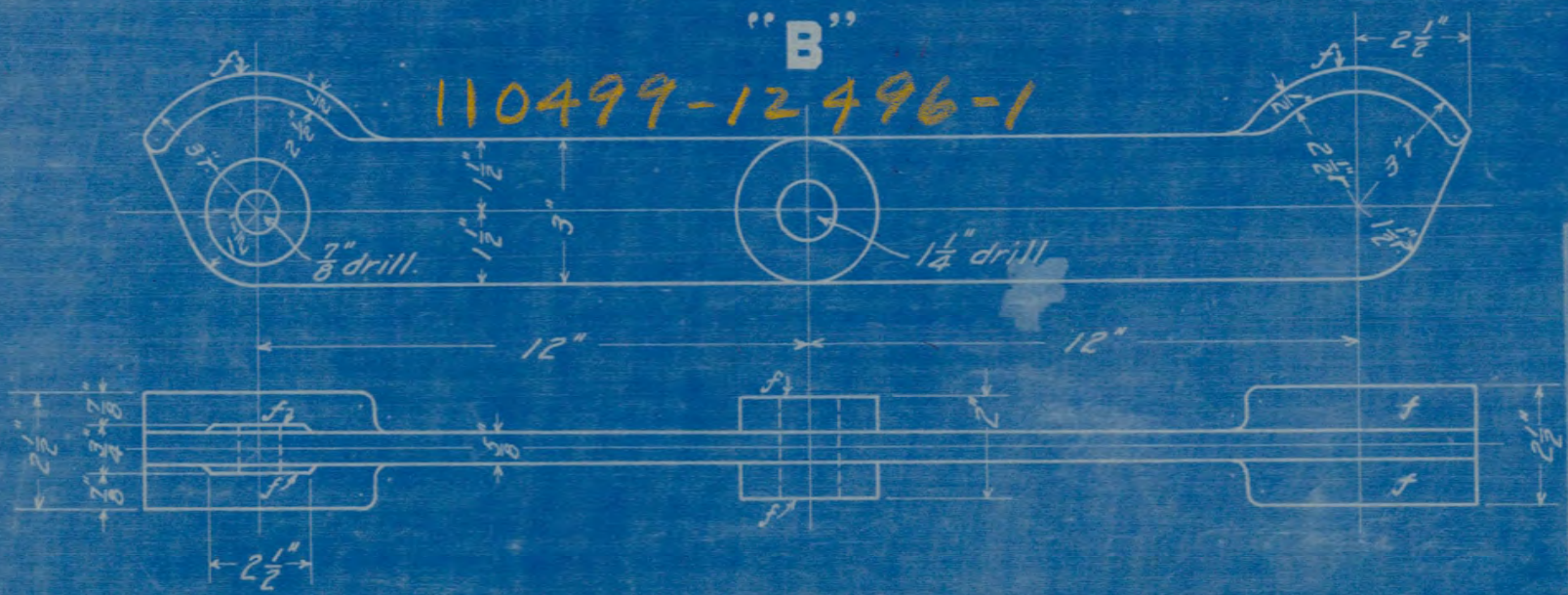
130055-12496-2



Note: Finished parts marked "f"
Material - Mall. iron.

"B"

110499-12496-1



Scale: 3" = 12"

A.C.L.R.R.

Std. coupler arm for lift bridges.

Signal Engrs. Office Wilmington N.C.

Approved Correct

Chief Engr Signal Engr.

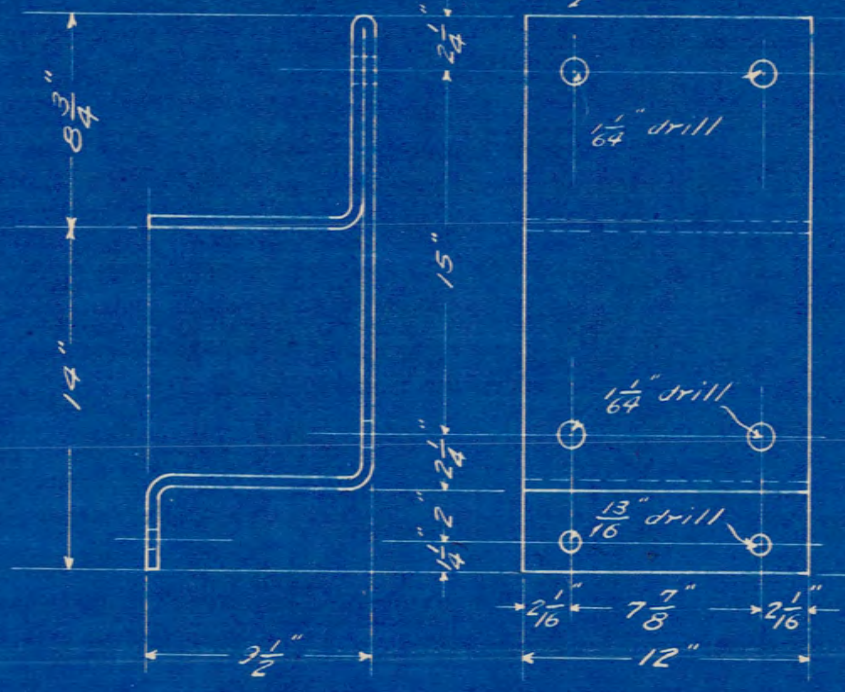
Was A-146 Feb 13, 1929.

Drawn April 15, 1915.

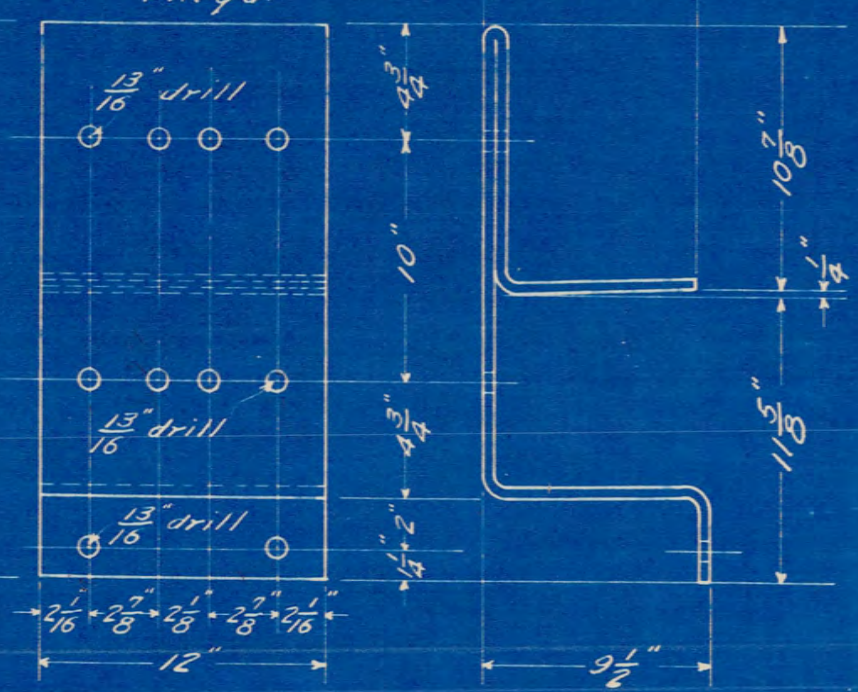
A-142

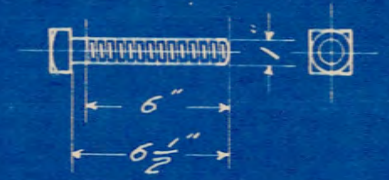
See Floris A-141 & 142

Bracket L
1 Req'd.

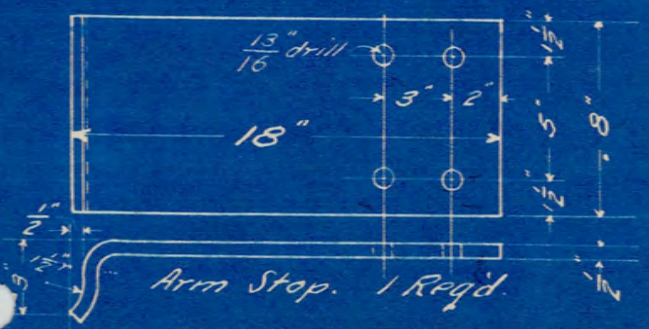


Bracket R
1 Req'd.



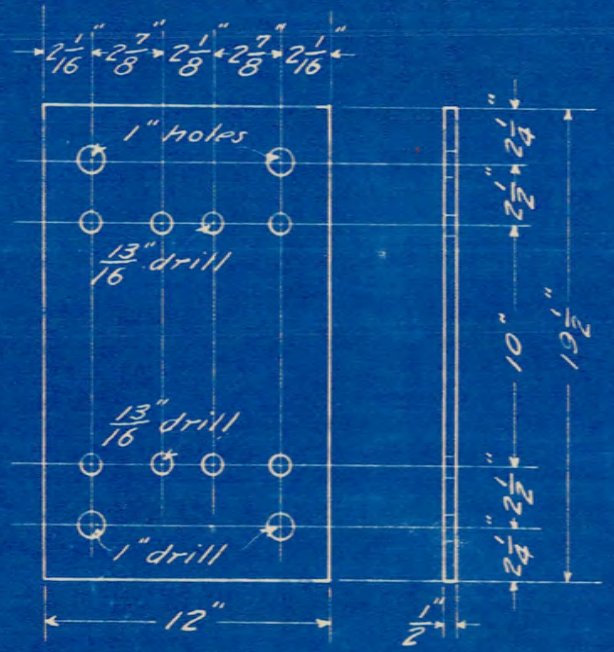


Adjusting bolt.
4 bolts req'd.
12 hex nuts req'd.
12 lock washers req'd.



Arm Stop. 1 Req'd.

Scale 1 1/2" = 12"



Adjusting plate
for bracket "L"
1 Req'd.

Note:
1/64" holes in bracket L and 1" holes in adjusting plate to be drilled perfect, as adjusting plate is secured to bracket "L" with 4 adjusting bolts.
Material 1/2" x 12" wrought iron.

A.C.L.R.R.

Brackets, plate & bolts
for
Universal lift bridge coupler.

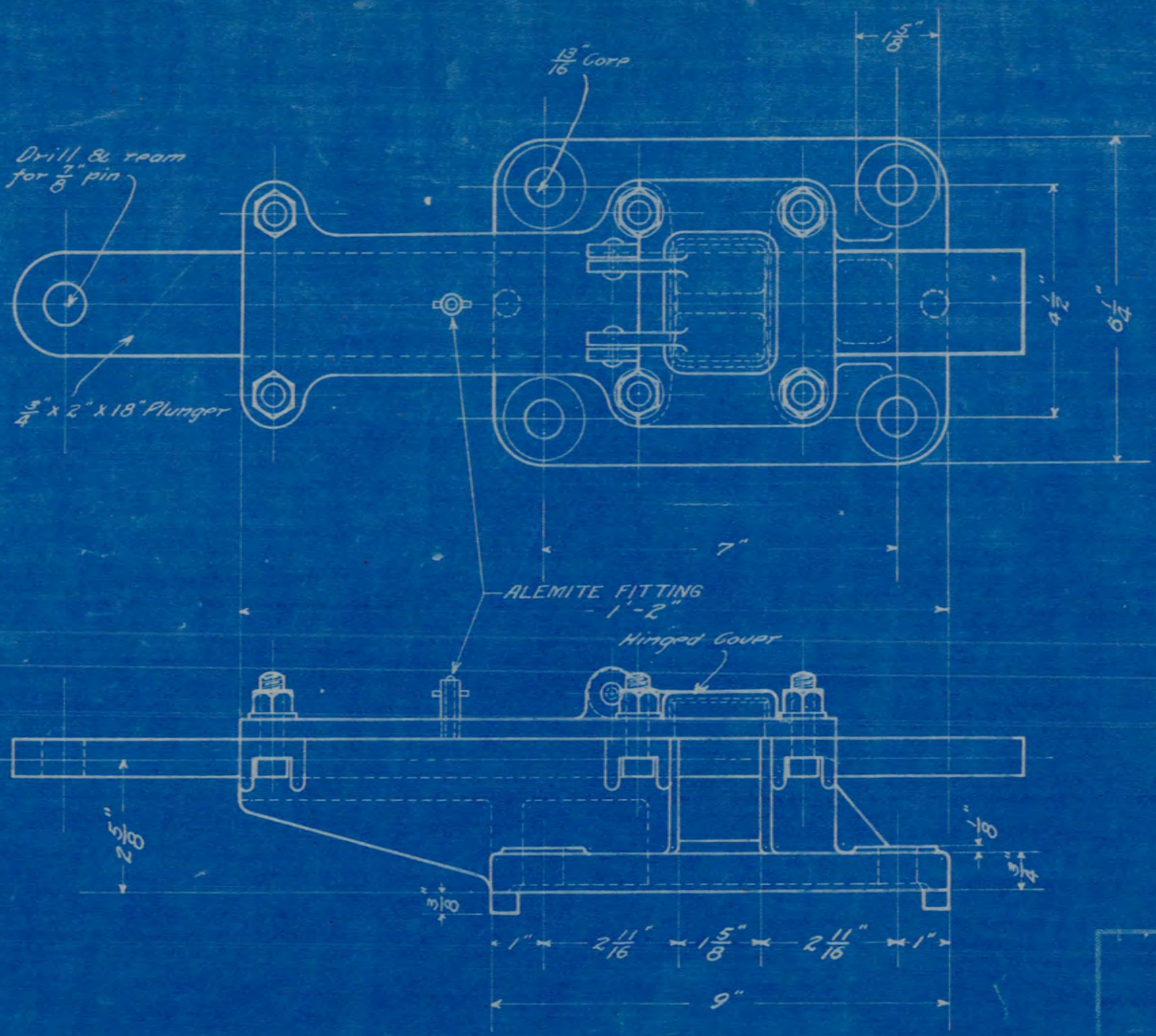
Signal Engr's. Office Wilmington, N.C.

Approved _____ Correct _____

_____ Chief Engr. _____ Signal Engr.

W/S A-141 Feb. 13 1929.	Stop added. 1-9-15 W.	Drawn C.E.W. Dec. 22, 1914.	A-142

Sheet 3 of 3



Scale 4" = 12"

ALEMITE FITTING ADDED. 11-12-28.	Stand was 7" wide. Nov. 21, 1919.

A.C.L.R.R.

Stiles

Std. flat plunger and lock.

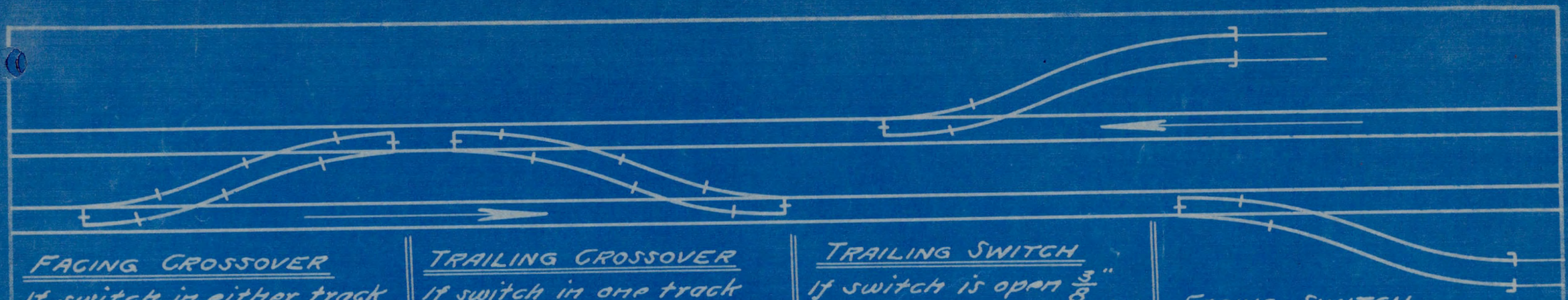
Signal Engrs. Office. Wilmington, N.C.

Approved Chief Engr. Correct Signal Engr.

Drawn May 29, 1917.

A-147

Sheet 1



FACING CROSSOVER

If switch in either track is open $\frac{1}{4}$" both tracks will be shunted.

TRAILING CROSSOVER

If switch in one track is open $\frac{3}{8}$", that track only will be shunted.
If switch in either track is open $\frac{7}{16}$", both tracks will be shunted.

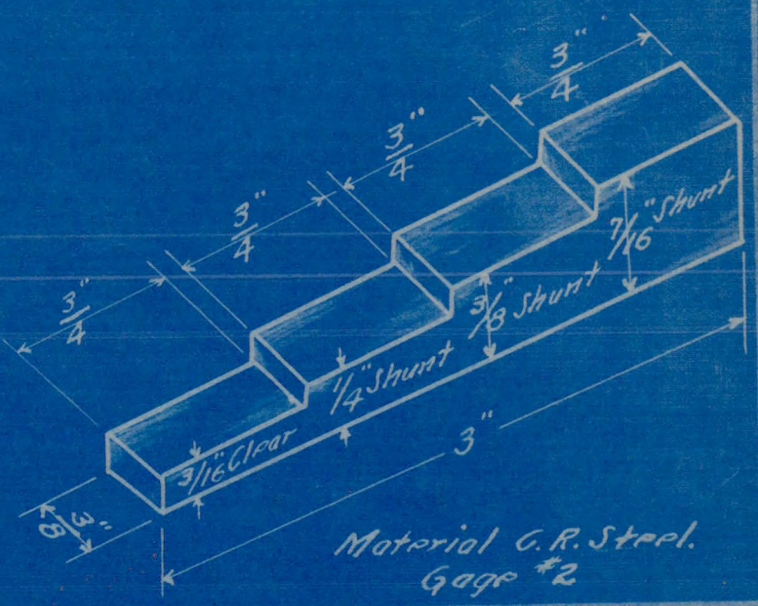
TRAILING SWITCH

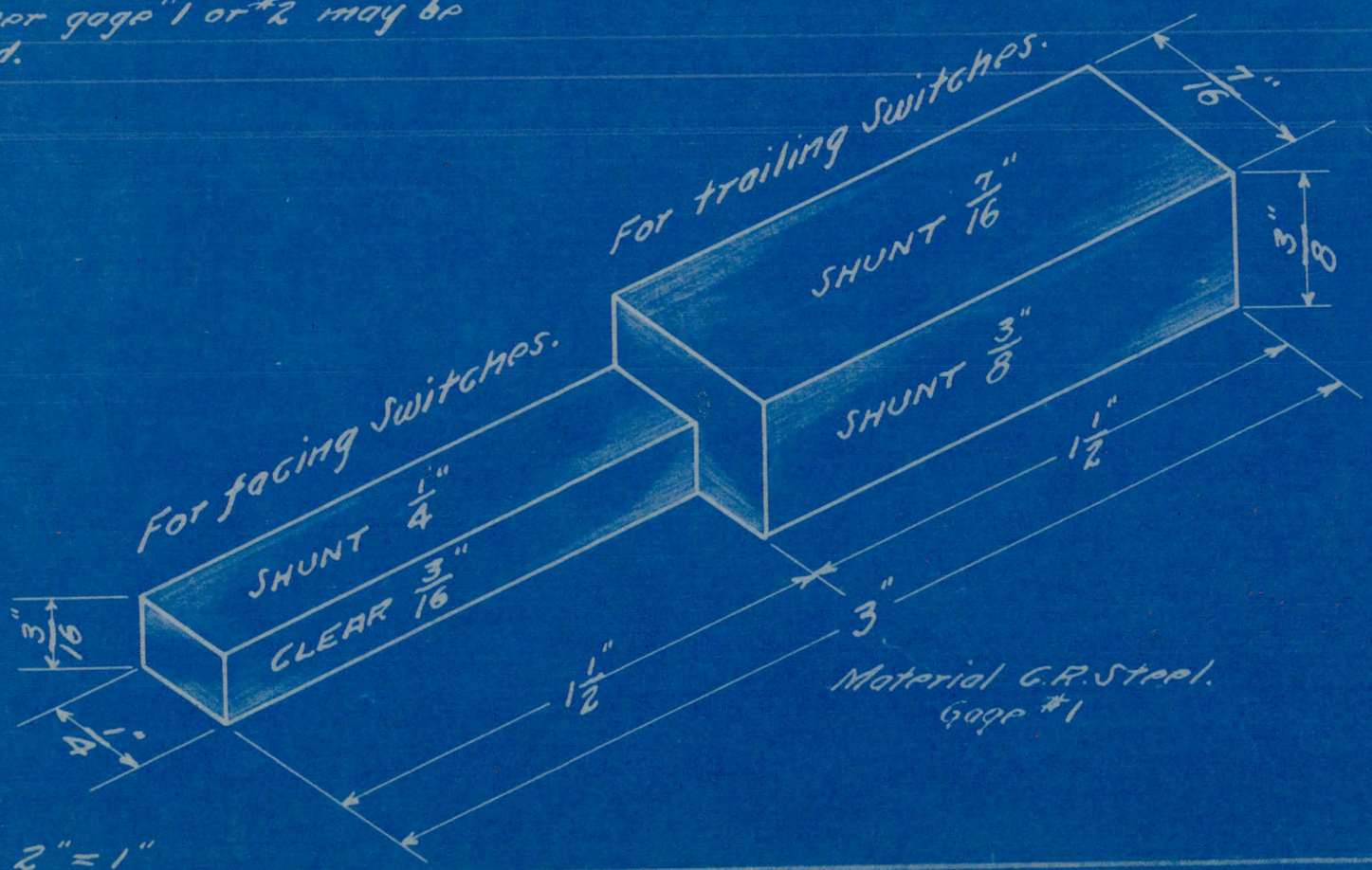
If switch is open $\frac{3}{8}$" track will be shunted.

FACING SWITCH

If switch is open $\frac{1}{4}$" track will be shunted.

NOTE:
All switches in Single track or FACING.
Either gage #1 or #2 may be used.





A.C.L.R.R.

Std. Switch Point GAUGE

Signal Engrs. Office: Wilmington, N.C.

Approved Correct

Chief Engr. Supt. Signals.

Drawn C.L.S. July 11, 1929

A-154

FACING CROSSOVER

If switch in either track is open $\frac{1}{4}$" both tracks will be shunted.

TRAILING CROSSOVER

If switch in one track is open $\frac{3}{8}$", that track only will be shunted. If switch in either track is open $\frac{7}{16}$", both tracks will be shunted.

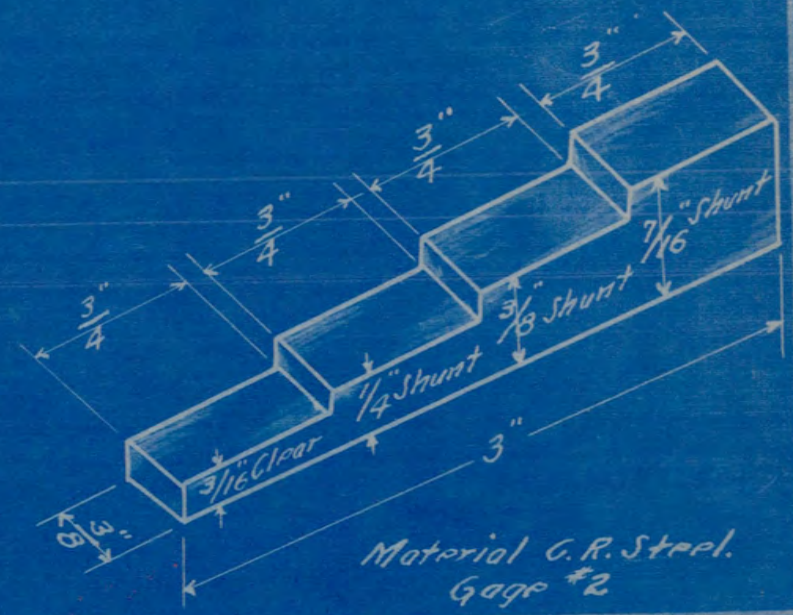
TRAILING SWITCH

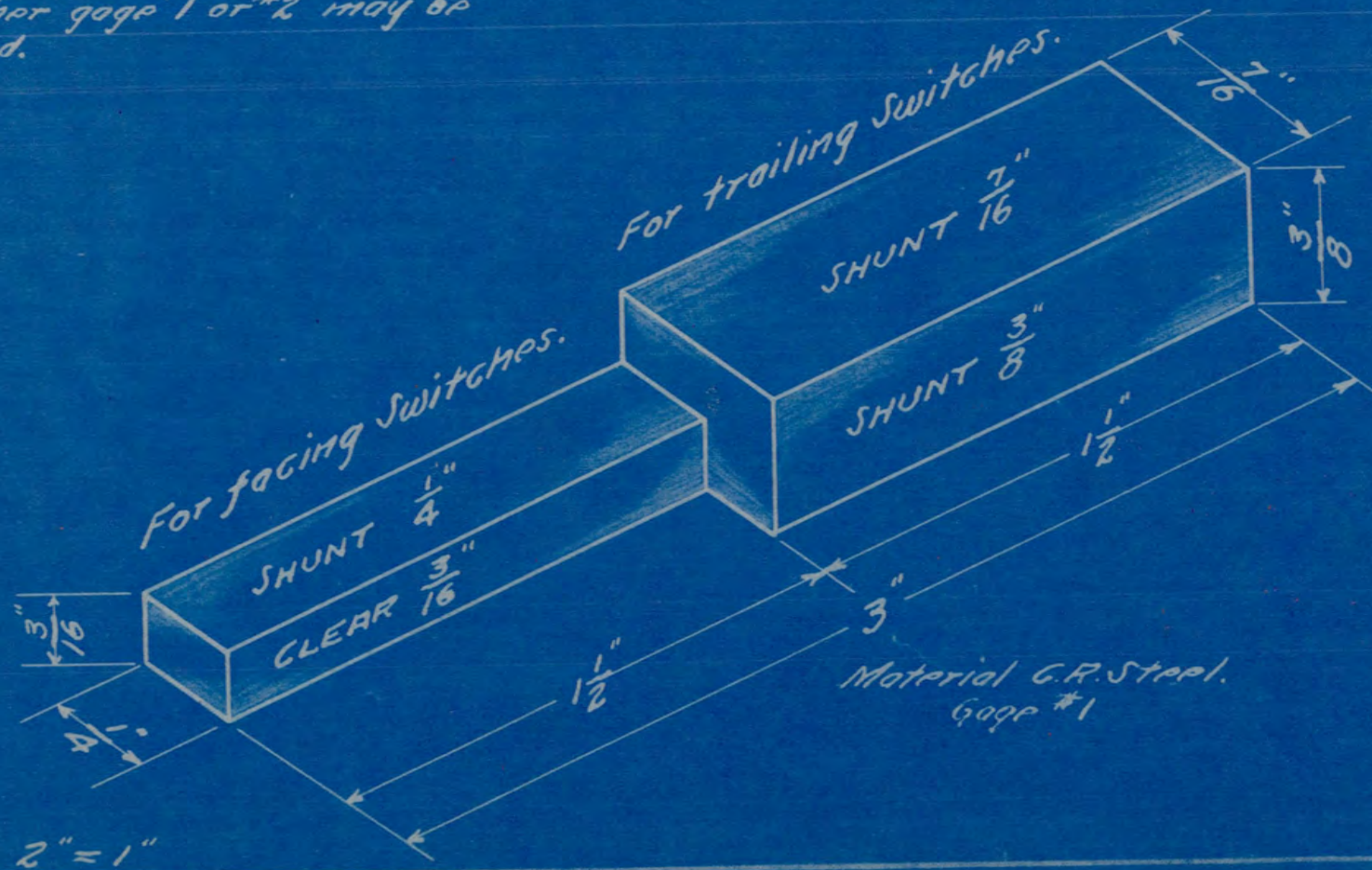
If switch is open $\frac{3}{8}$" track will be shunted.

FACING SWITCH

If switch is open $\frac{1}{4}$" track will be shunted.

NOTE:
All switches in Single track or FACING.
Either gage #1 or #2 may be used.





Scale 2" = 1"

A.C.L.R.R.

Std. Switch Point GAUGE

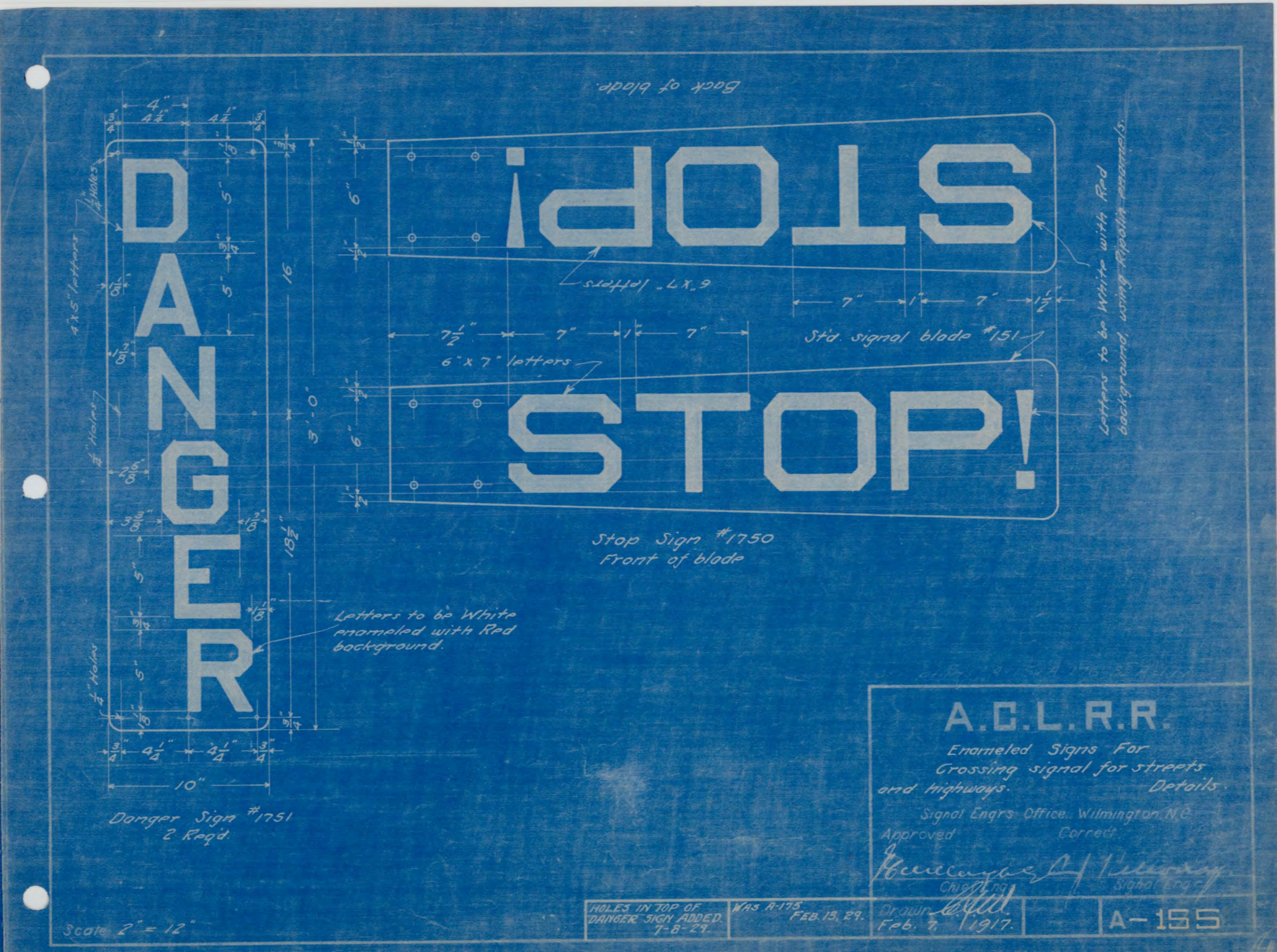
Signal Engrs. Office Wilmington, N.C.

Approved Correct

Chief Engr. Supt. Signals.

Drawn C.P.L.S. July 11, 1929

A-154



A.C.L.R.R.

Enameled Signs For Crossing signal for streets and highways. Details.

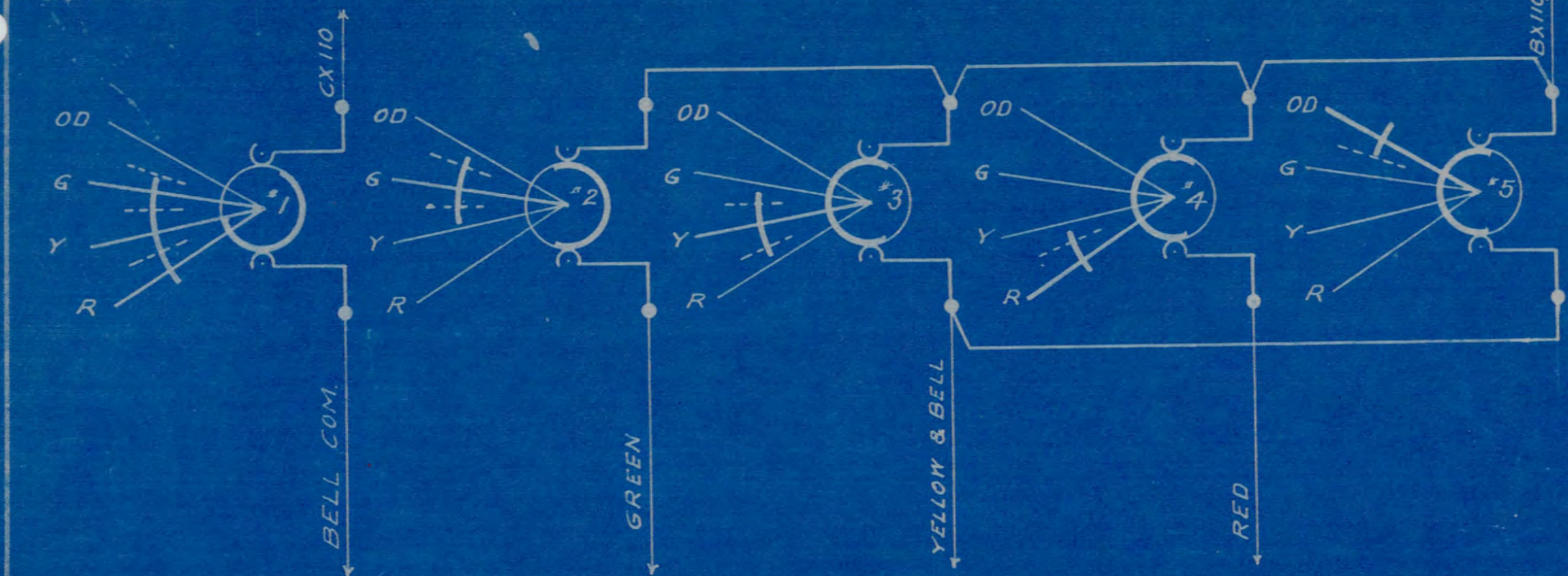
Signal Engrs Office. Wilmington N.C.

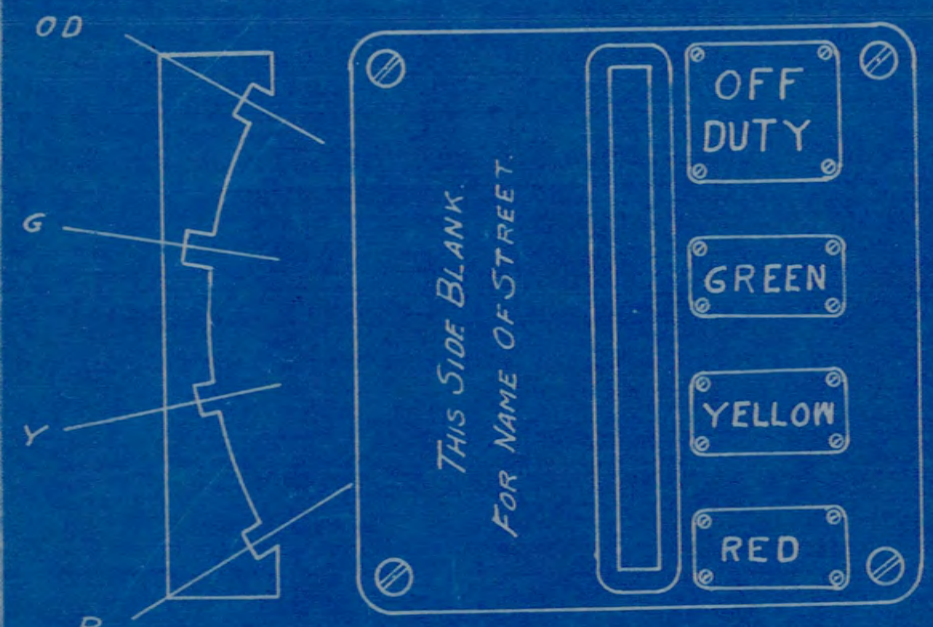
Approved Correct

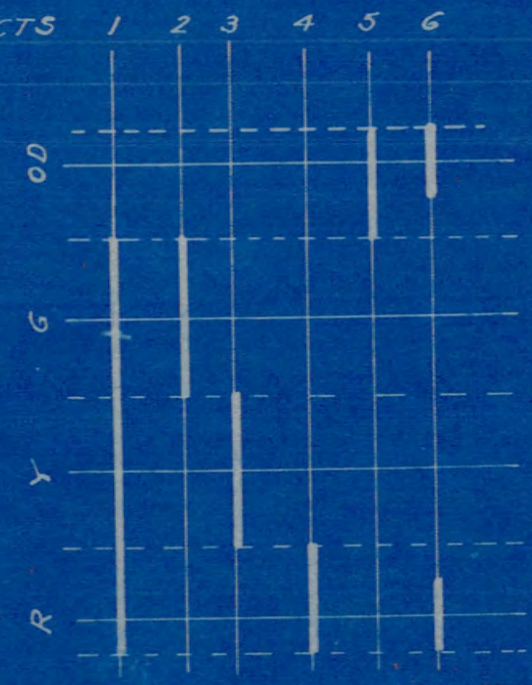
Chief Engr. Signal Engr.

HOLES IN TOP OF DANGER SIGN ADDED. 7-8-29.	WAS A-175. FEB. 13, 29.	Drawn Feb. 7, 1917.	A-165

SHEET 4 OF 4.







NOTE: SHADED PORTION SHOWS AREA THRU WHICH CONTACTS ARE MADE.

A.C.L.R.R.

TYPICAL ARRANGEMENT FOR "STYLES" CIRCUIT CONTROLLER FOR TRAFFIC SIGNALS

Signal Engrs. Office Wilmington, N.C.

Approved — Correct

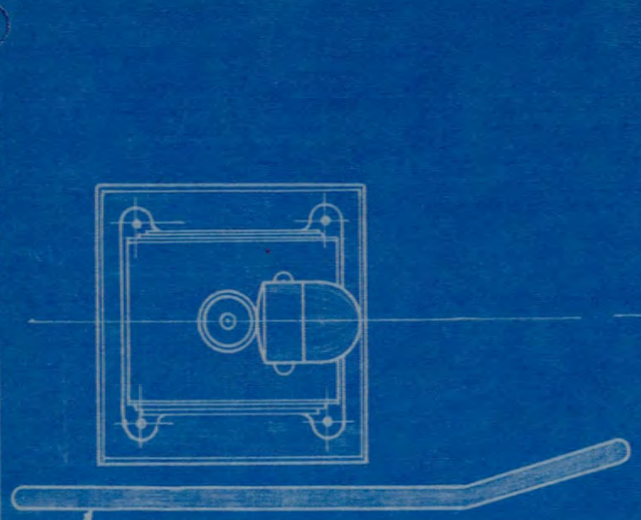
Chief Engr. — SUPT. OF SIGNALS.

REV. 7-14-28 To SHOW FLASHER BUTTON REMOVED.	SUPERSEDES PD-178 OF 10-30-26	Drawn EJP. OCT. 6, 1927	A-168

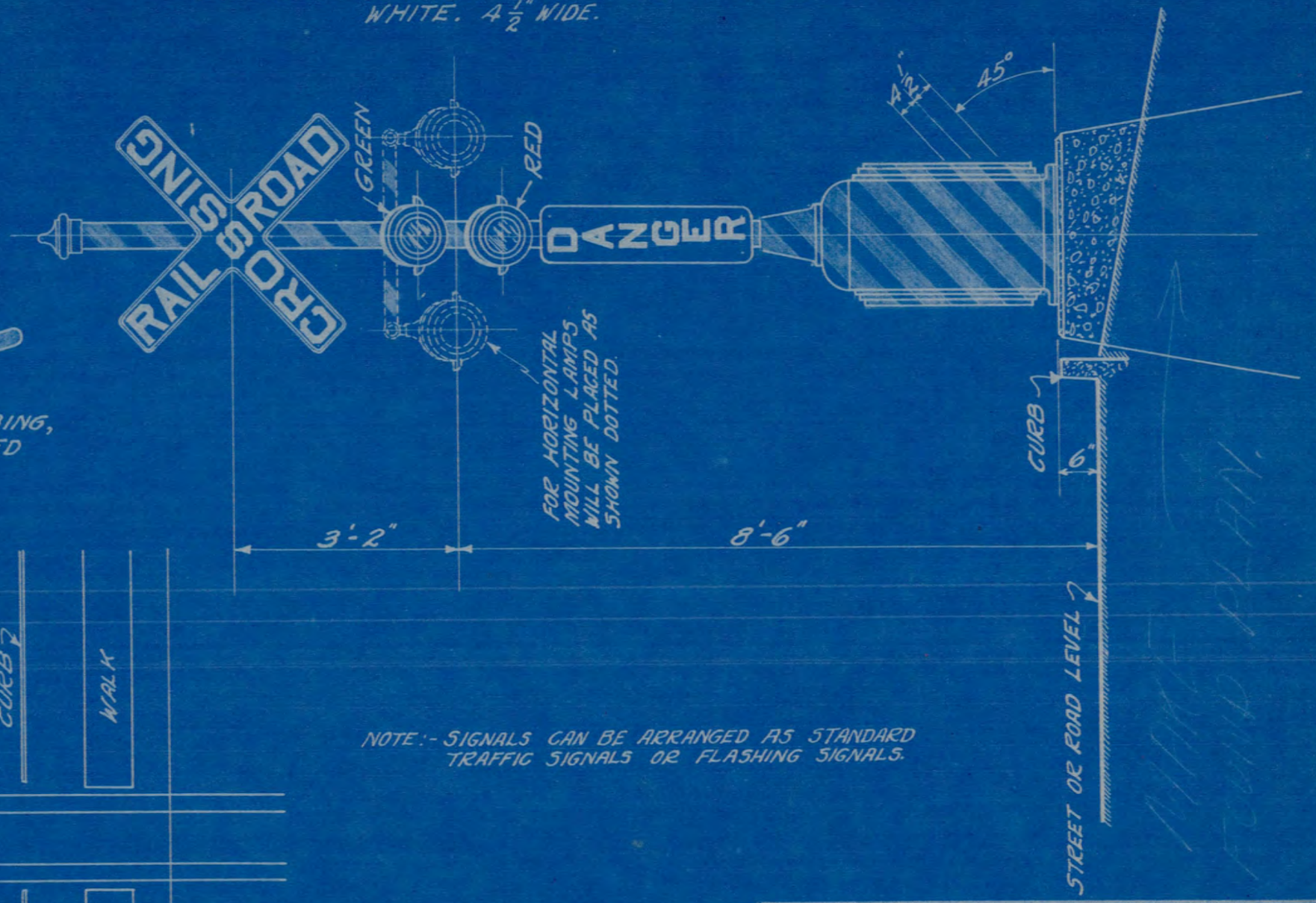
Scale: NONE.

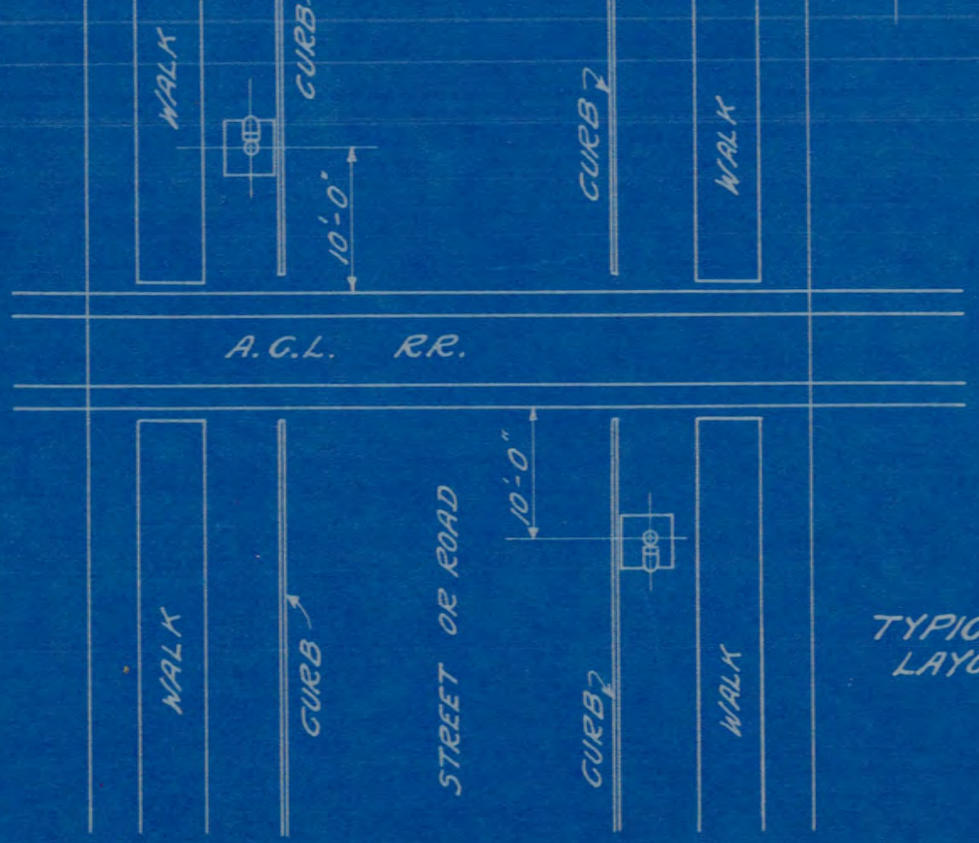
SHEET 4 MORE SHEETS

PAINTING: ALTERNATE STRIPES OF BLACK AND WHITE. 4½" WIDE.



WHERE THERE IS NO CURBING, CURBING MUST BE INSTALLED AS SHOWN.





TYPICAL LAYOUT

NOTE:- SIGNALS CAN BE ARRANGED AS STANDARD TRAFFIC SIGNALS OR FLASHING SIGNALS.

A. C. L. R. R.

STREET OR ROAD CROSSING SIGNAL

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

Revisions,

SUPERSEDES A-168 SHT. 5 OF 5-6-29.

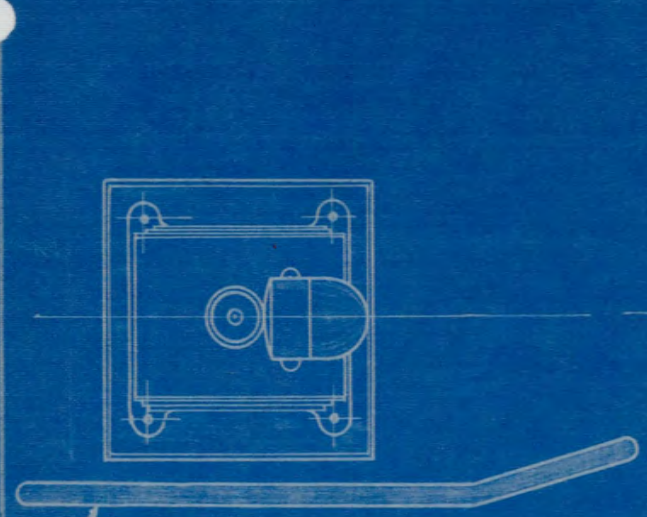
Drawn C.A.W.
DEC. 10, 1929

A-168

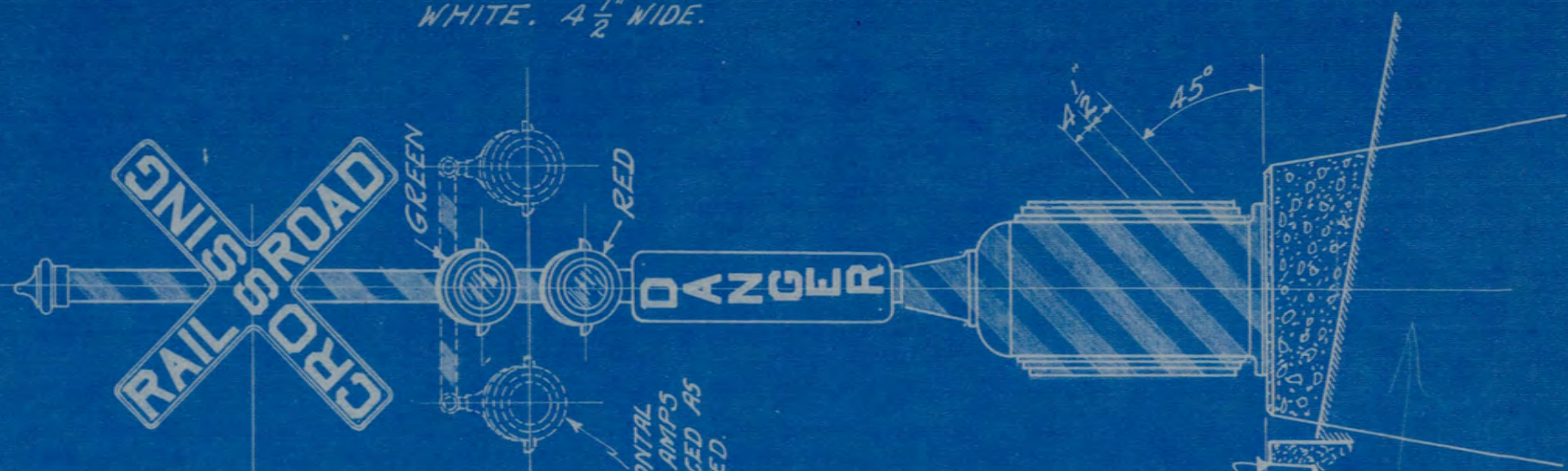
Scale: NONE

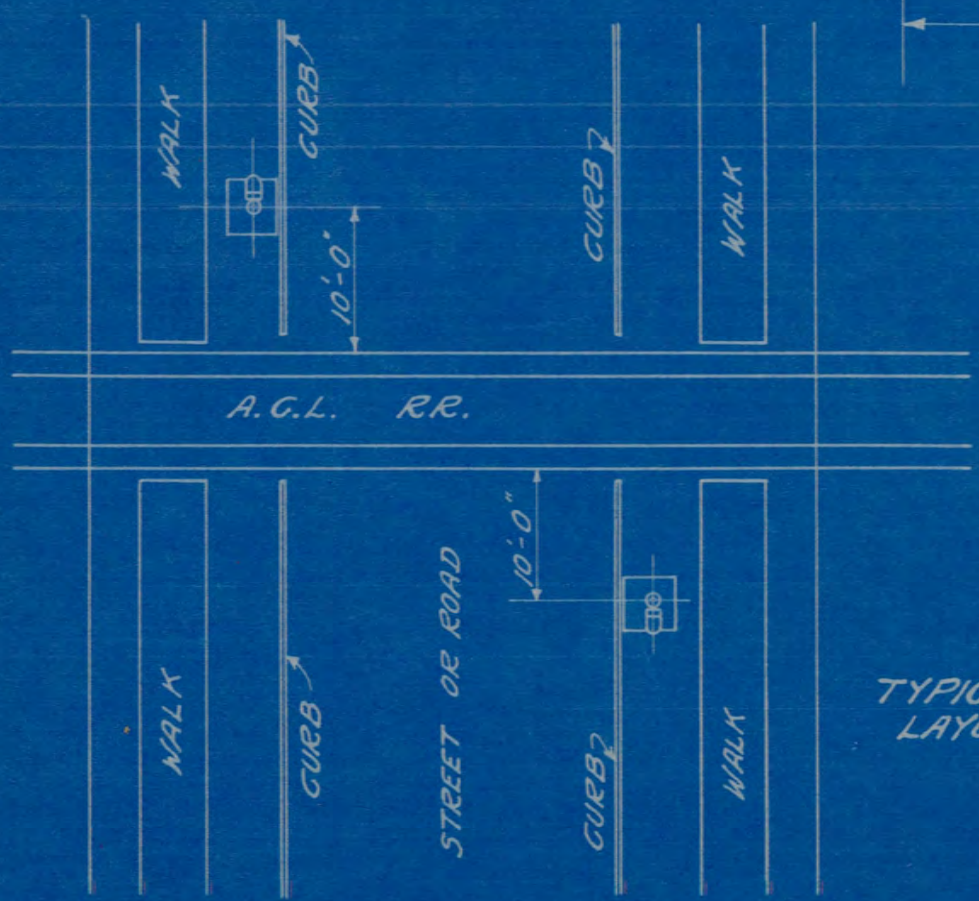
Sheet 5 of 2 Prints

PAINTING: ALTERNATE STRIPES OF BLACK AND WHITE. 4 1/2" WIDE.



WHERE THERE IS NO CURBING, CURBING MUST BE INSTALLED AS SHOWN.





TYPICAL LAYOUT

NOTE:- SIGNALS CAN BE ARRANGED AS STANDARD TRAFFIC SIGNALS OR FLASHING SIGNALS.

A. C. L. R. R.

STREET OR ROAD CROSSING SIGNAL

Supt. of Signals Office: Wilmington, N. C.

Approved | Correct

Chief Eng'r. | Supt. of Signals.

Revisions.

SUPERSEDES A-168 SHT. 5 OF 5-6-29.

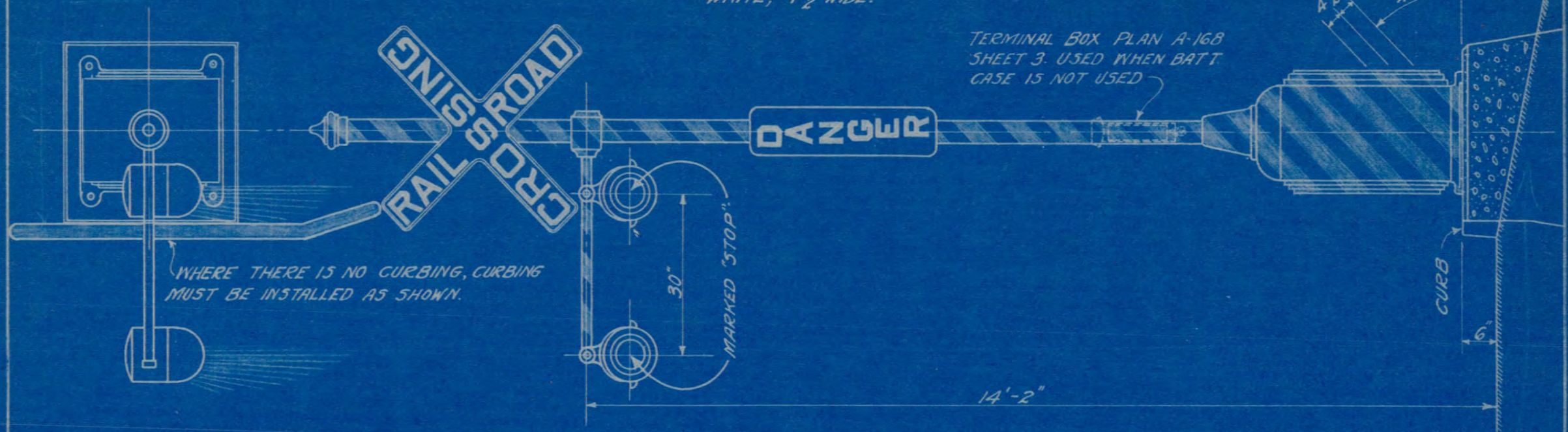
Drawn C.A.W.
DEC. 10, 1929

A-168

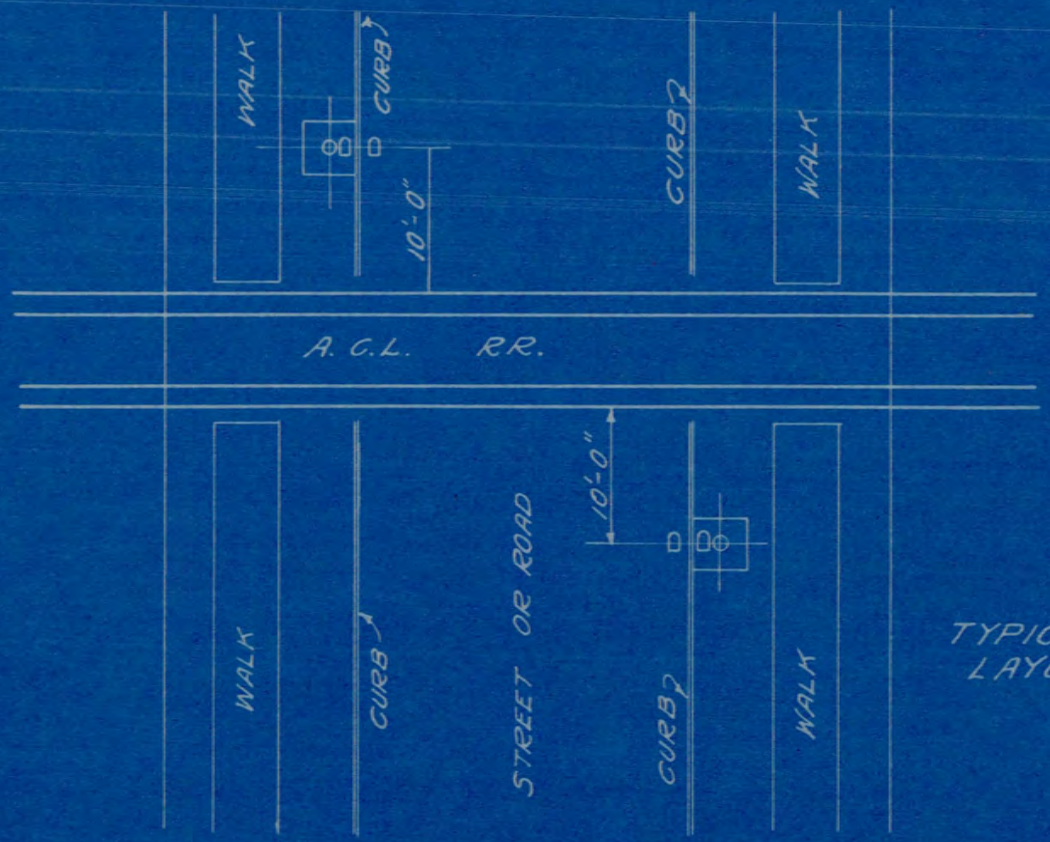
Scale: NONE

Sheet 5 of 2 Prints

PAINTING: ALTERNATE STRIPES OF BLACK AND WHITE, 4½" WIDE.



NOTE:- SIGNALS CAN BE ARRANGED AS STANDARD TRAFFIC SIGNALS OR FLASHING SIGNALS



TYPICAL LAYOUT

A. C. L. R. R.

STREET OR ROAD CROSSING SIGNAL
(SIDE OF POLE MOUNTING)

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

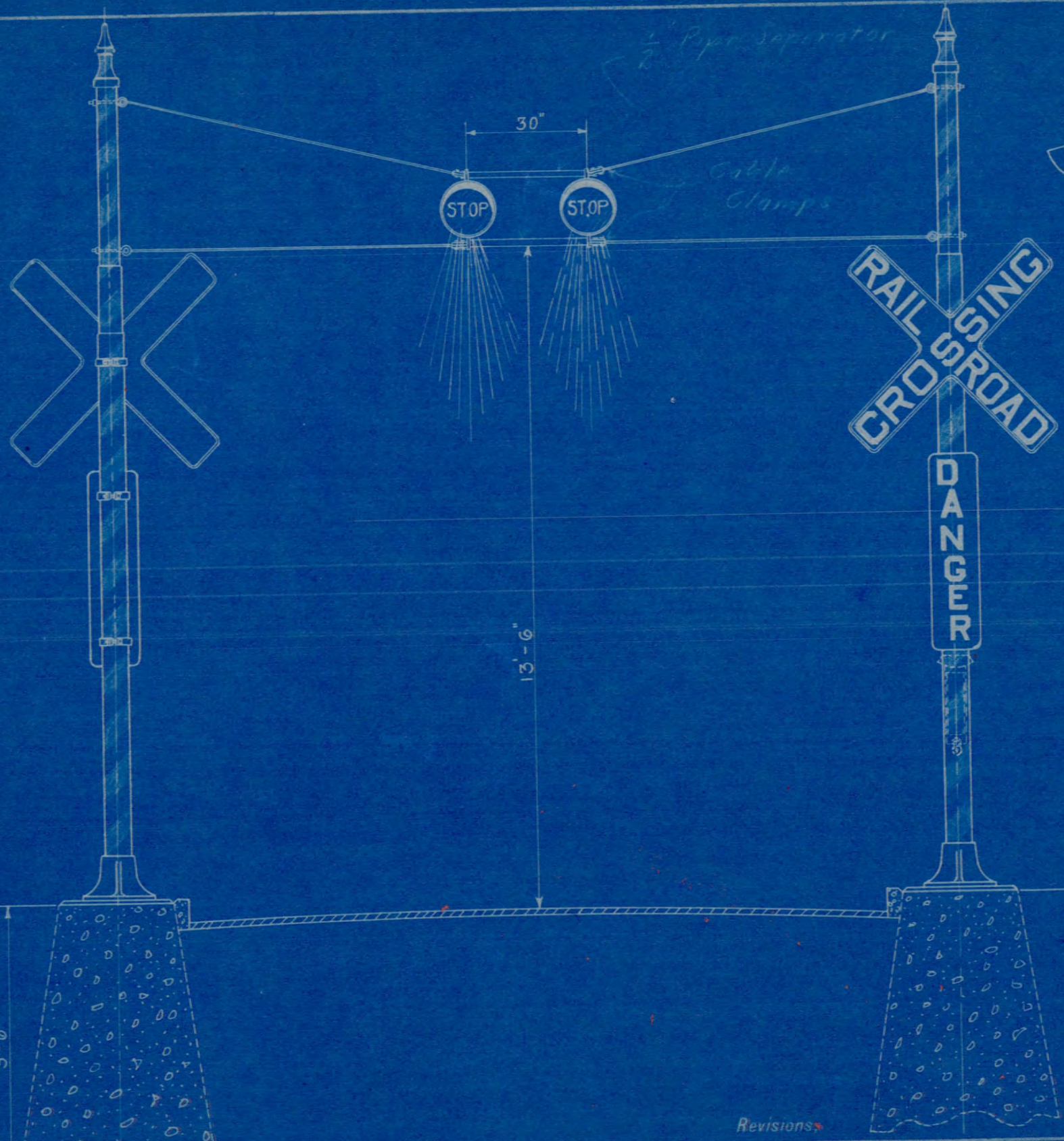
Chief Eng'r. Supt. of Signals.

Revisions.

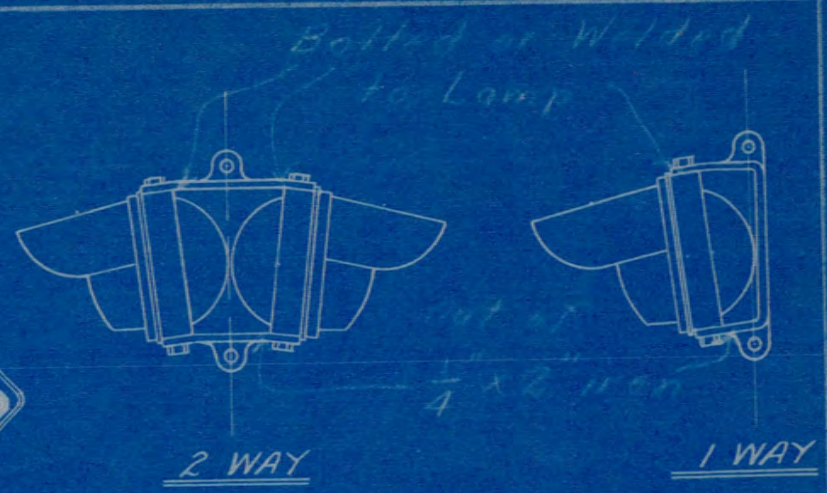
Drawn C.A.W.
JAN. 4, 1930

A-168

Scale: NONE



Scale: 3/8" = 12"



A. C. L. R. R.

SUSPENDED TYPE CROSSING SIGNAL

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

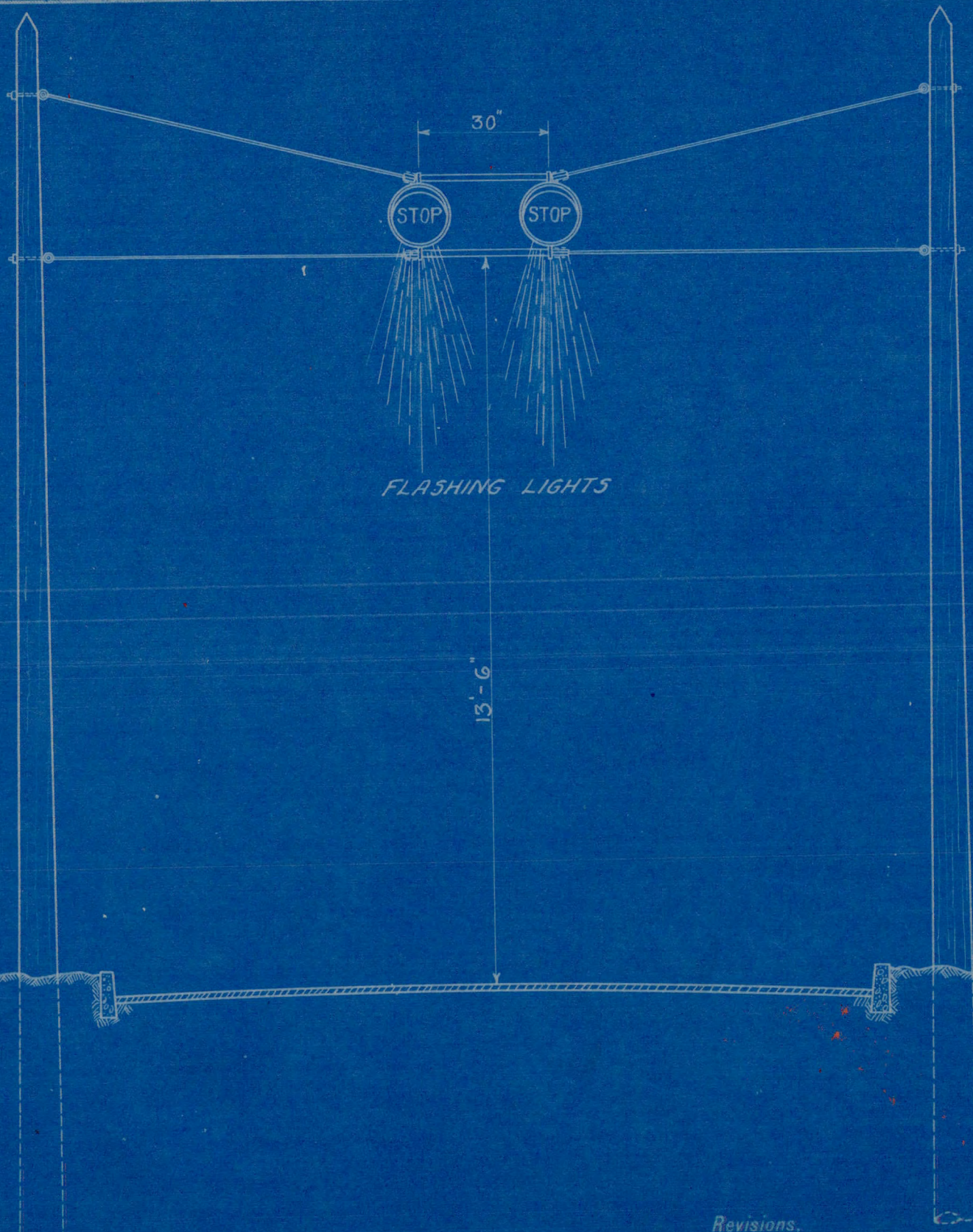
Chief Eng'r. Supt. of Signals.

Revisions:

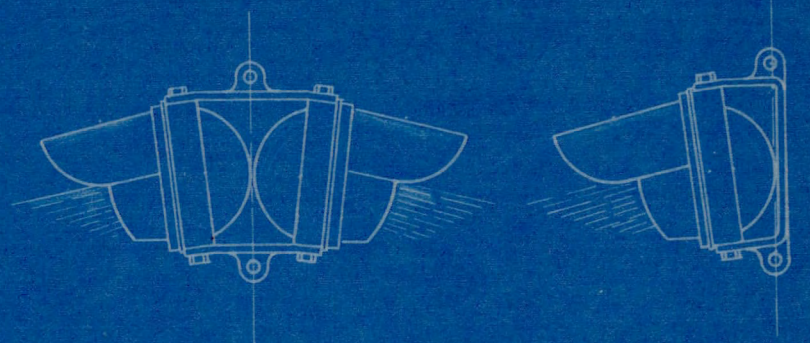
Drawn WEH.
JAN. 7, 1930

A-168

Sheet 7 of ____ ____ Prints



FLASHING LIGHTS



2 WAY

1 WAY

NOTE:- POLES WOOD OR IRON.

A. C. L. R. R.

SUSPENDED TYPE CROSSING SIGNAL

Supt. of Signals Office : Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

Revisions.

Drawn W.E.H

JAN. 7, 1930.

A-168

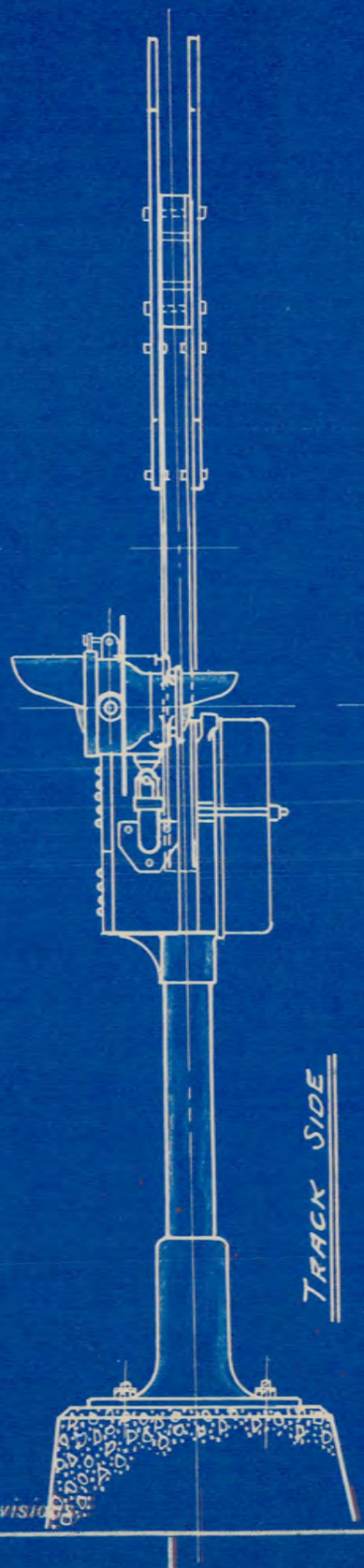
Scale : $\frac{3}{8}$" = 1'2"

DESCRIPTON

1 Cast iron Crossing Sign ARA. Sig. Spc. 1640A
1 Red Enameled Steel Disc.
2 Reflector STOP signs white letters.
2 Lamp Units, WPS type 925 or US&S HC-8
2 11 Volt, 11 Watt Incandescent lamps, US&S Cat. Pl. K-158 Ref. 35
2 16" Backgrounds.
1 10 Volt, Edison Voltage regulators, prouided for each lamp where prim. battery is used.
1 WRS Co. Rotating Disc mechanism for Model 7 crossing Signal with sufficient space in housing for Voltage Reg., Terminals, Wiring, etc.
1 Track Sign ARA Sig. Spc. 1645A
1 Numeral, giving number of tracks crossed ARA Sig. Spc. 1650A
1 Std. 4" pipe Signal mast.
1 Base ACL A-133 Sh. 1 Ref. "B" or ARA Sig. Spc. 1449.
4 Galv. 1" x 36" found. bolts, nuts and washers.
1 Conc. found. ACL A-88 Sh. 20

Reflector units shall be of the small single refraction type. ARA Sig. Spc. Specl. 15633.

Cast iron crossing sign supports 3" x 1 3/8" x 3/16" channel.



Note: Lamps and Case to be locked with ACL Signal Pad Locks.

Scale:

Revisions

A. C. L. R. R.

HIGHWAY CROSSING SIGNAL
FLASHING LIGHT TYPE.

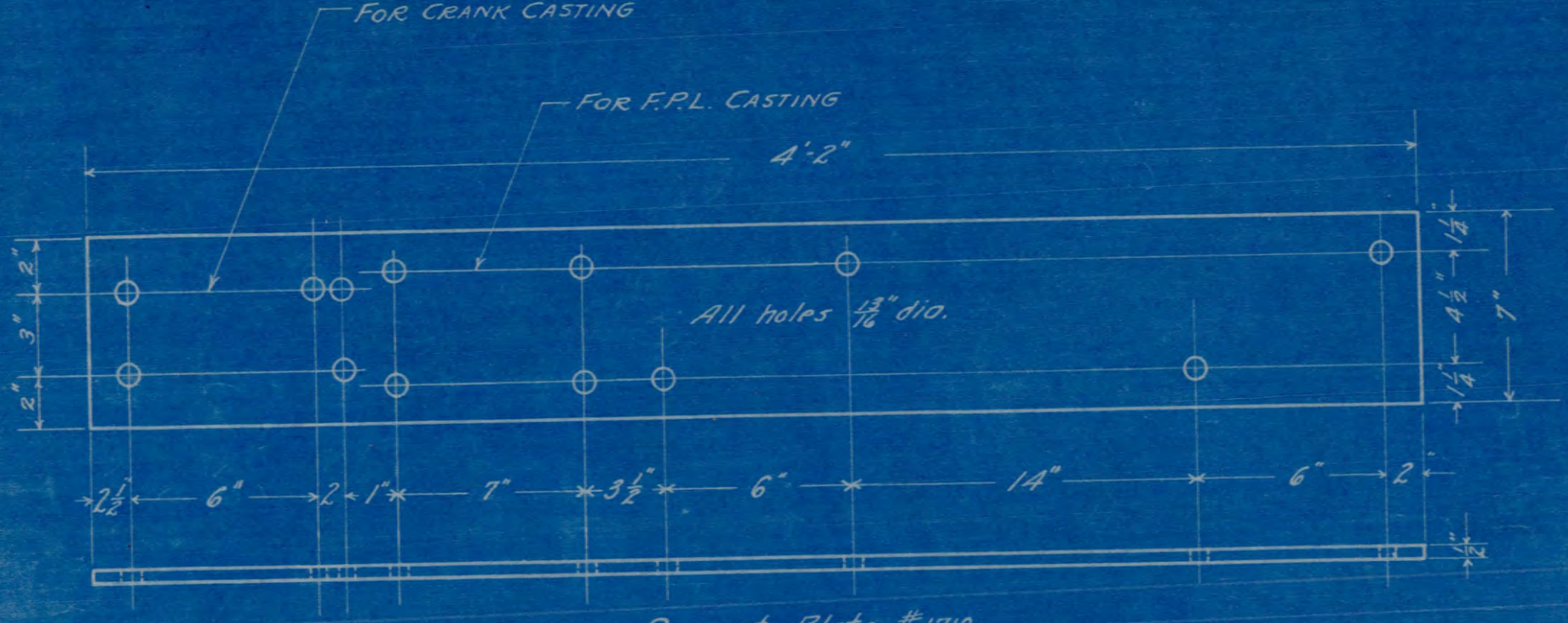
Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

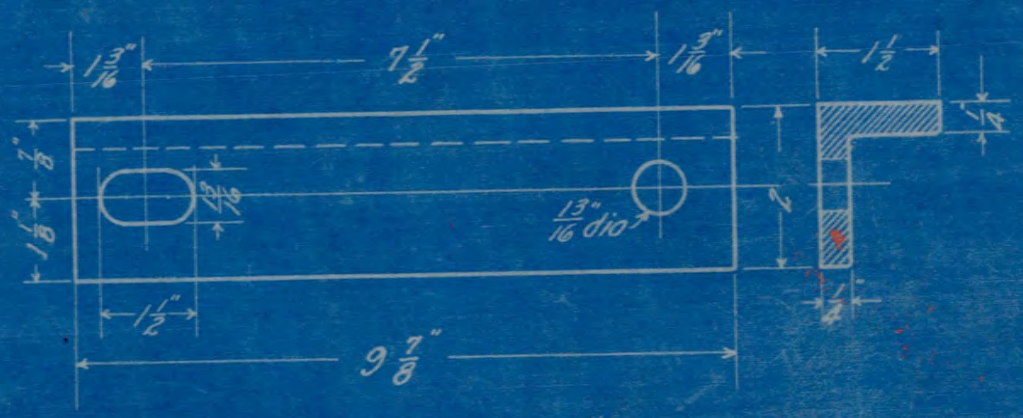
Drawn G.R.W.
Nov. 23, 1933.

A-168



Support Plate. #1710
Rolled Steel.

Note: Plates must be straight and punched in accordance with dimensions.



Angle Washer. #1711
Mat'l. Galv. Iron.

A.C.L.R.R.

St'd. Support Plate and 2" Washer For Signal Apparatus.

Signal Engrs Office Wilmington, N.C.

Approved Chief Engr.

Correct A. H. Gilbreath Signal Engr.

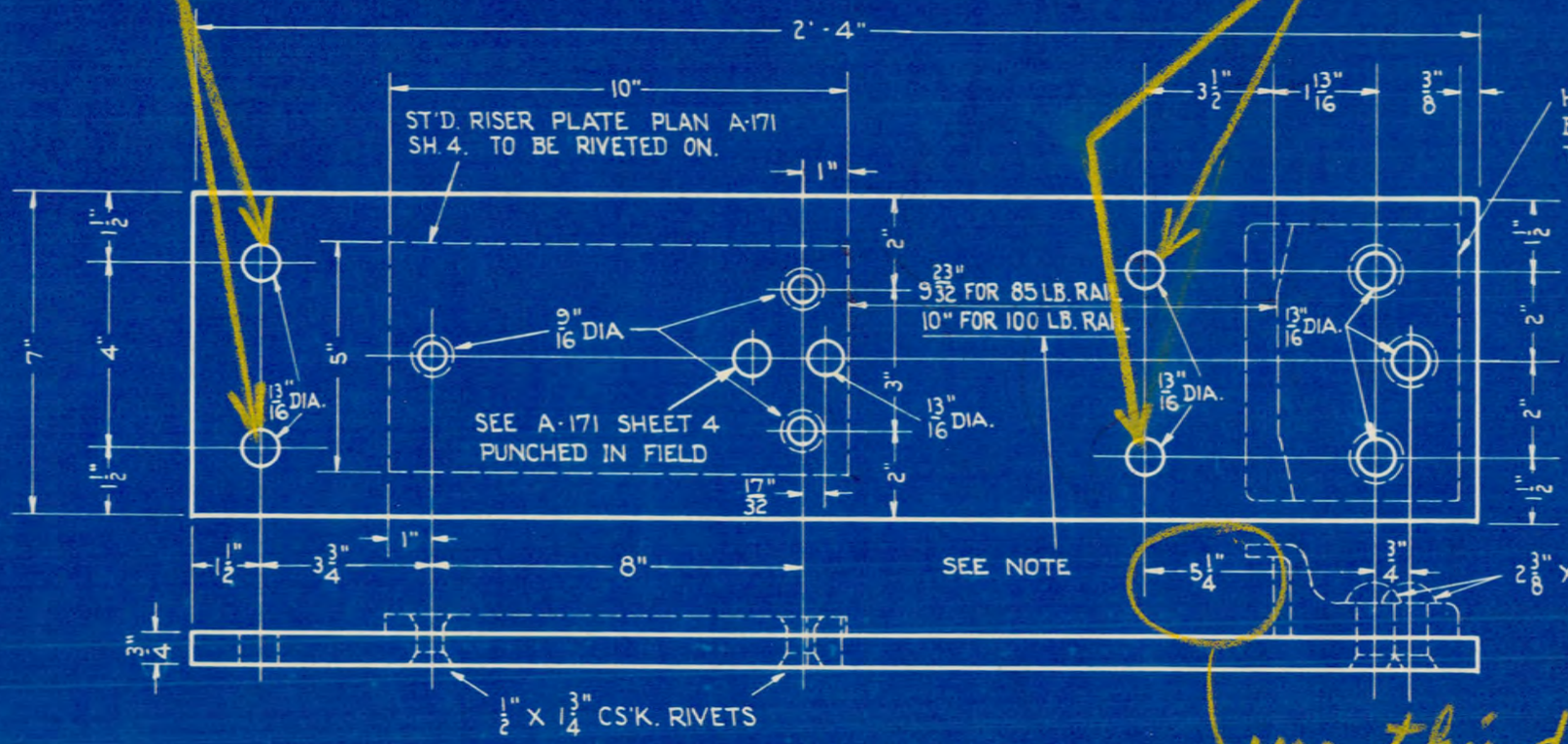
REVISED SIZE OF ANGLE WASHER AND HOLE CENTERS. 8-23-27	Revised: 11-6-26	Drawn W.E.H Oct. 2, 1926	A-171

Scale 2" = 1'-0" & 4" = 1'-0"

Sheet 1 of 4 sheets.

Furnish 3/4"x 11 3/4" stud bolts
Pc. 48922-8261-sh.-126

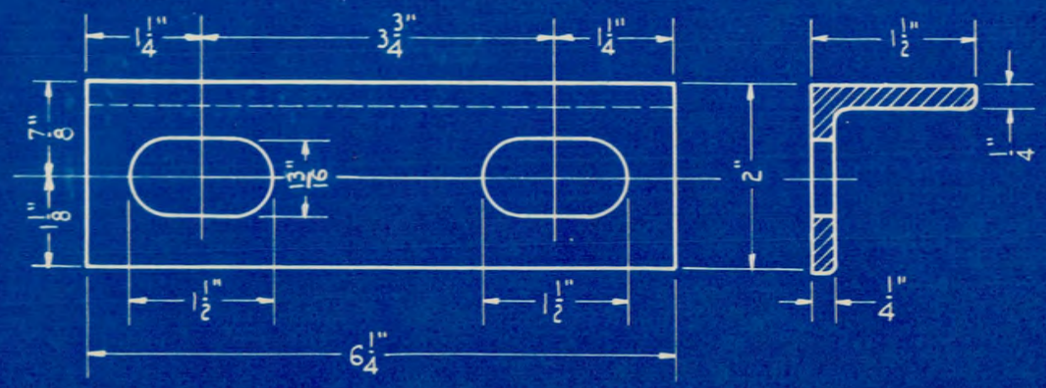
3/4"x 13 1/2" stud bolts by
J. D. Stiles Co.



use this dimension.

GAUGE PLATE NO. 1712
MATERIAL ROLLED STEEL

NOTE:-
SPECIFY WHETHER FOR 85 LB. OR 100 LB. RAIL.



ANGLE WASHER GALVANIZED NO. 1713
2 REQUIRED

A. C. L. R. R.

GAUGE PLATE
COMPLETE WITH HEEL BLOCK AND RISER PLATE ATTACHED

SIGNAL ENGR'S. OFFICE: WILMINGTON, N.C.

APPROVED

CORRECT
C.J. KELLOWAY

CHIEF ENG'R. | SUPT. OF SIGNALS

SCALE 3"=12" & 1/2"=1"

REVISIONS

ANGLE WASHER REVISED. OCT. 22, 1932	REVISED 11-23-27. " 2-13-29.	REVISED HOLE CENTERS IN ANGLE WASHERS. 8-23-27	REVISED: ANGLE WASHER WAS 1 3/4" X 2". 1-14-27

DRAWN W.E.H.
NOV. 8, 1926

A-171

SHEET 2

~~3/4" x 12" Rivets~~
3/4 x 11 3/4" stud bolts
Pc. # 8922-8261-dr. 126

~~3/4" x 12" Rivets~~
3/4 x 13 1/2 stud bolts
(Clay Utica Co.)

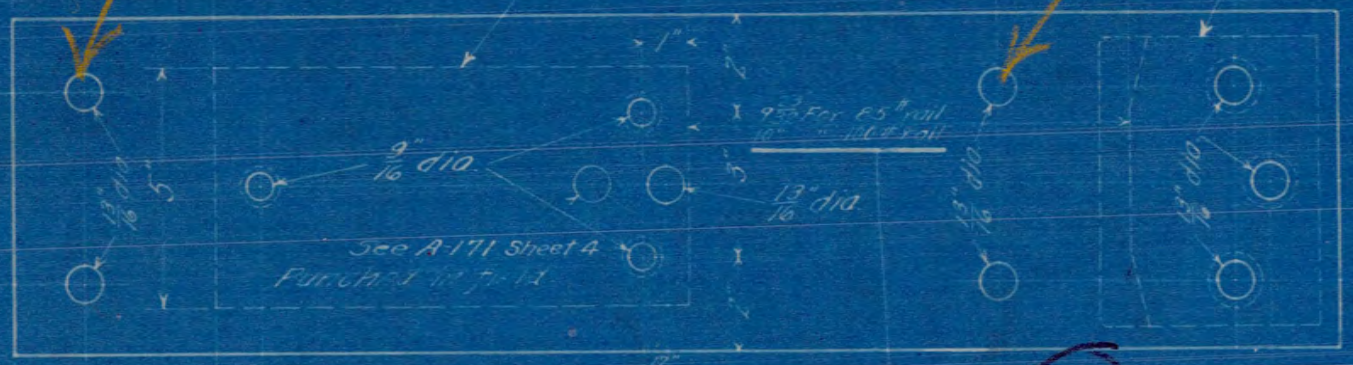
2'-4"

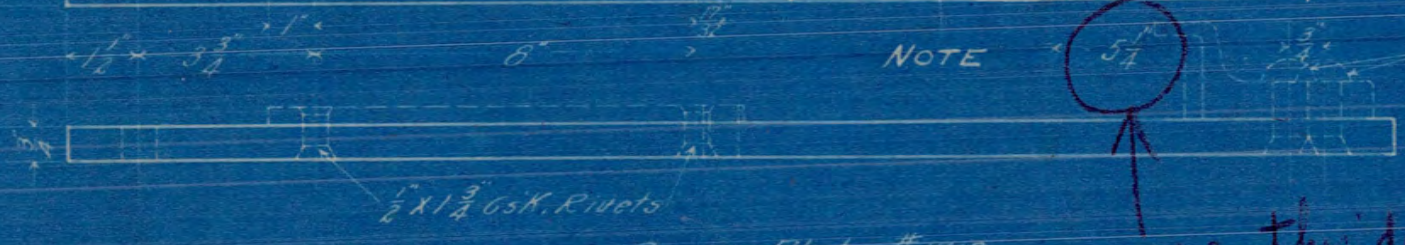
10"

3 1/2"

Std. Riser Plate. Plan A-171 sheet 4.
To be riveted on.

Heel Block Type "C" Rail Brace. Plan A-190.
To be riveted on.





Gauge Plate. # 1112
Matr'l. Rolled STEEL.

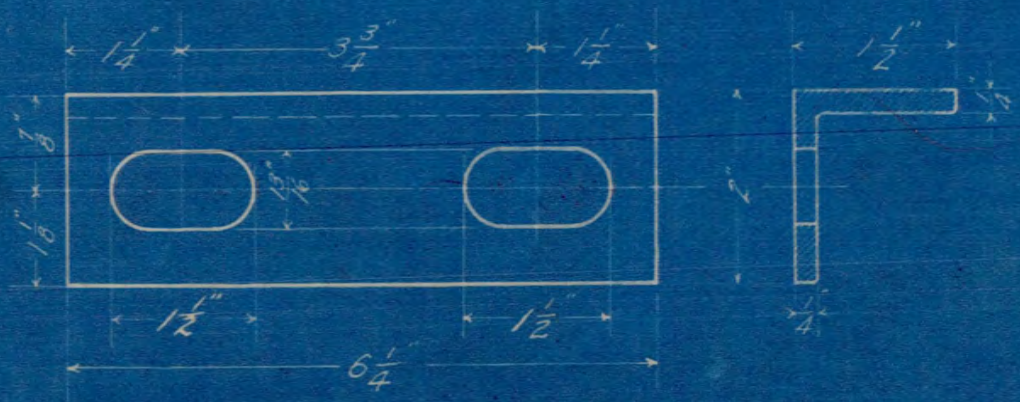
NOTE

5 1/4"

use this dimension.

2 3/8" x 1 3/4" Round Head Rivets.

Notes: Specify gauge for 85# or 100# rail.



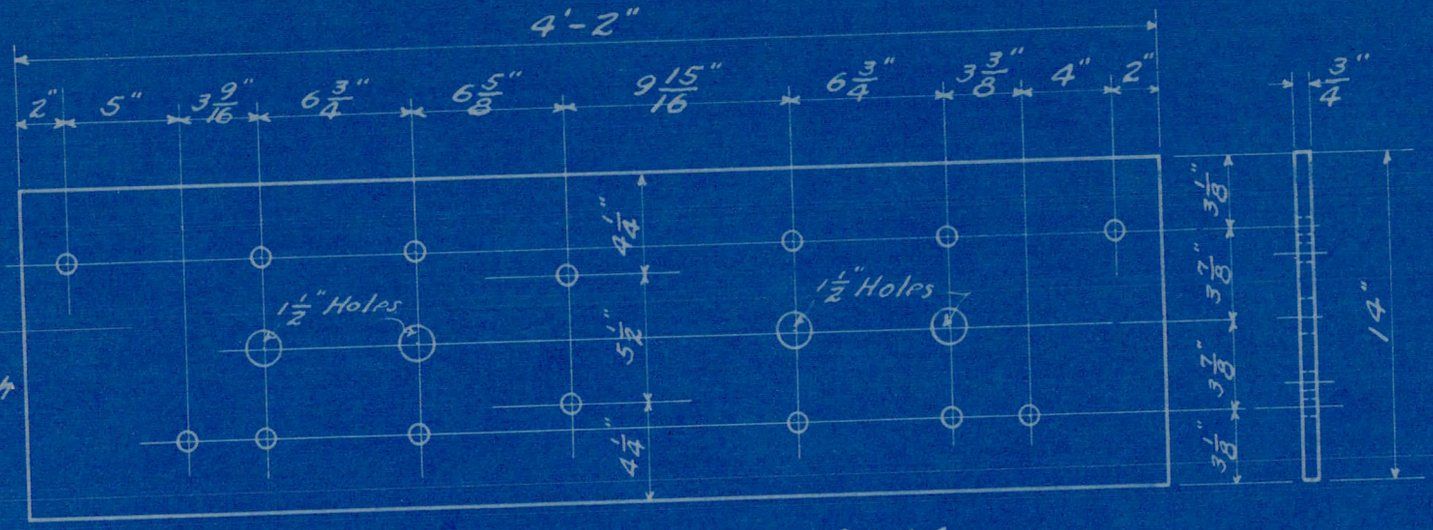
Angle Washer. Gal'v. # 1713
2 Req'd.

A.C.L.R.R.
Gauge Plate
Complete with Heel Block and Riser Plate Attached

Signal Engr's Office Wilmington N.C.
Approved Correct
C. H. Holloway
Chief Engr. Signal Engr.

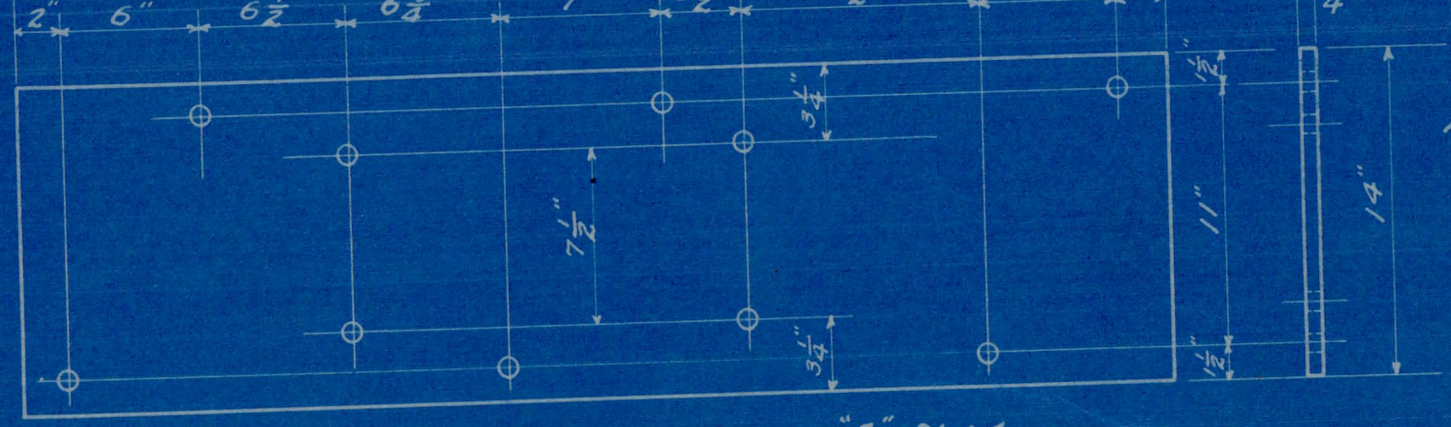
Scale 3" - 1'-0" & 1/2" - 1".	Angle washer revised Oct. 22. 1932.	REVISED 11-[illegible]-27.	REVISED HOLE CENTERS IN ANGLE WASHERS 8-23-27.	Revised: Angle washer was 1 1/4" x 2". 1-14-27.	Drawn W.E.H. Nov. 8th, 1926.	A-171

Sheet 2



All Holes $\frac{13}{16}$" punch unless otherwise shown.

PLATE FOR UNIVERSAL SLM
Rolled Steel
#1714



All Holes $\frac{13}{16}$" punch.

PLATE FOR STYLE "A" SLM
Rolled Steel
#1715

A.C.L.R.R.
SUPPORT PLATES
for
Universal and Style "A" S.L.M's.

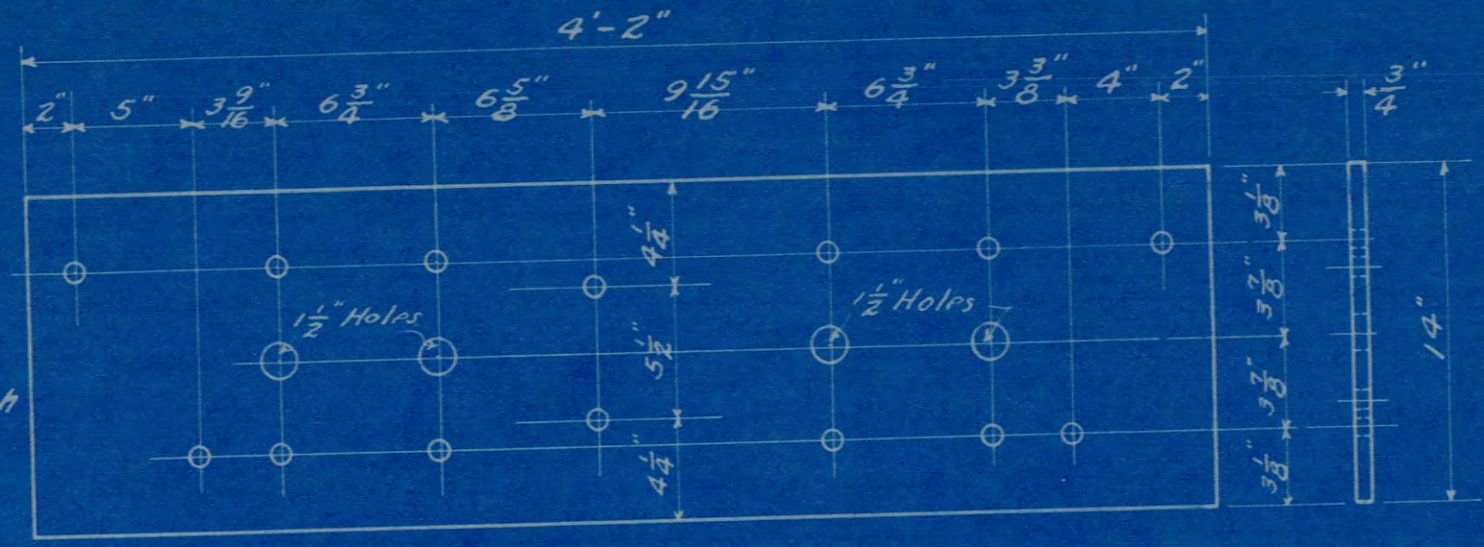
Signal Engr's Office, Wilmington N.C.

Approved _____ Correct _____

Chief Engr _____ Signal Engr _____

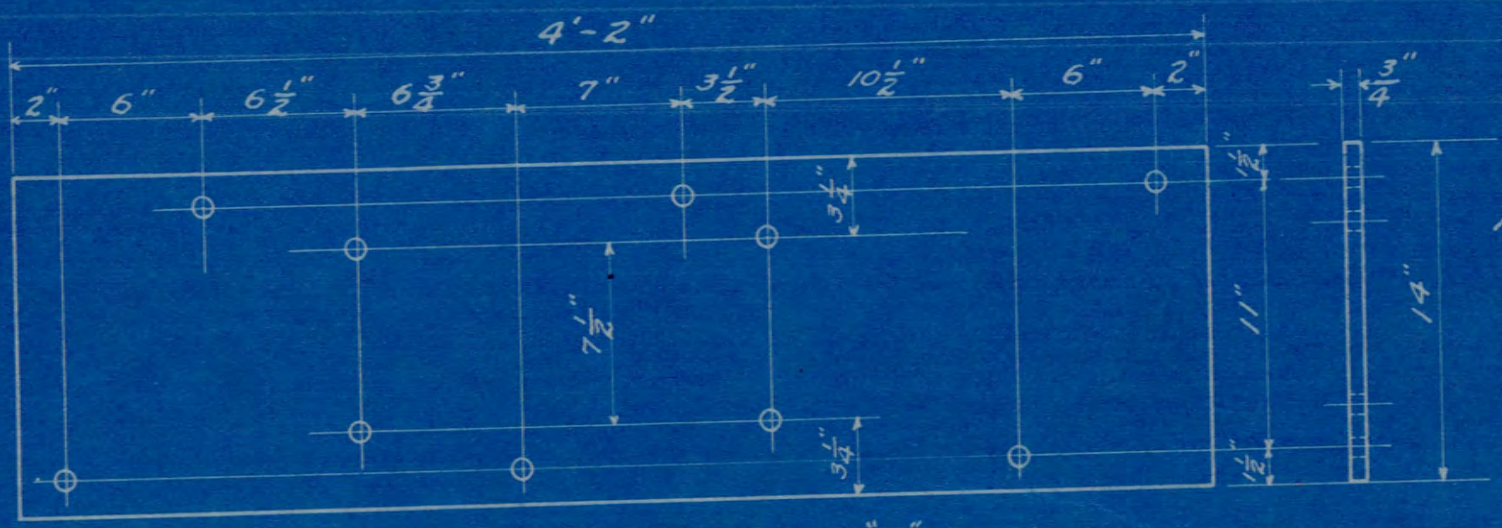
		Redrawn, Supersedes A-171 of 9-12-28.	Drawn C.C.W. Feb. 13, 1929.		A—171

Scale: 1 1/2" = 12"



All Holes $\frac{13}{16}$" punch unless otherwise shown.

PLATE FOR UNIVERSAL SLM
Rolled Steel
#1714



All Holes $\frac{13}{16}$" punch.

PLATE FOR STYLE "A" SLM
Rolled Steel
#1715

A.C.L.R.R.
SUPPORT PLATES
for
Universal and Style "A" S.L.M's.

Signal Engr's. Office. Wilmington, N.C.

Approved Correct

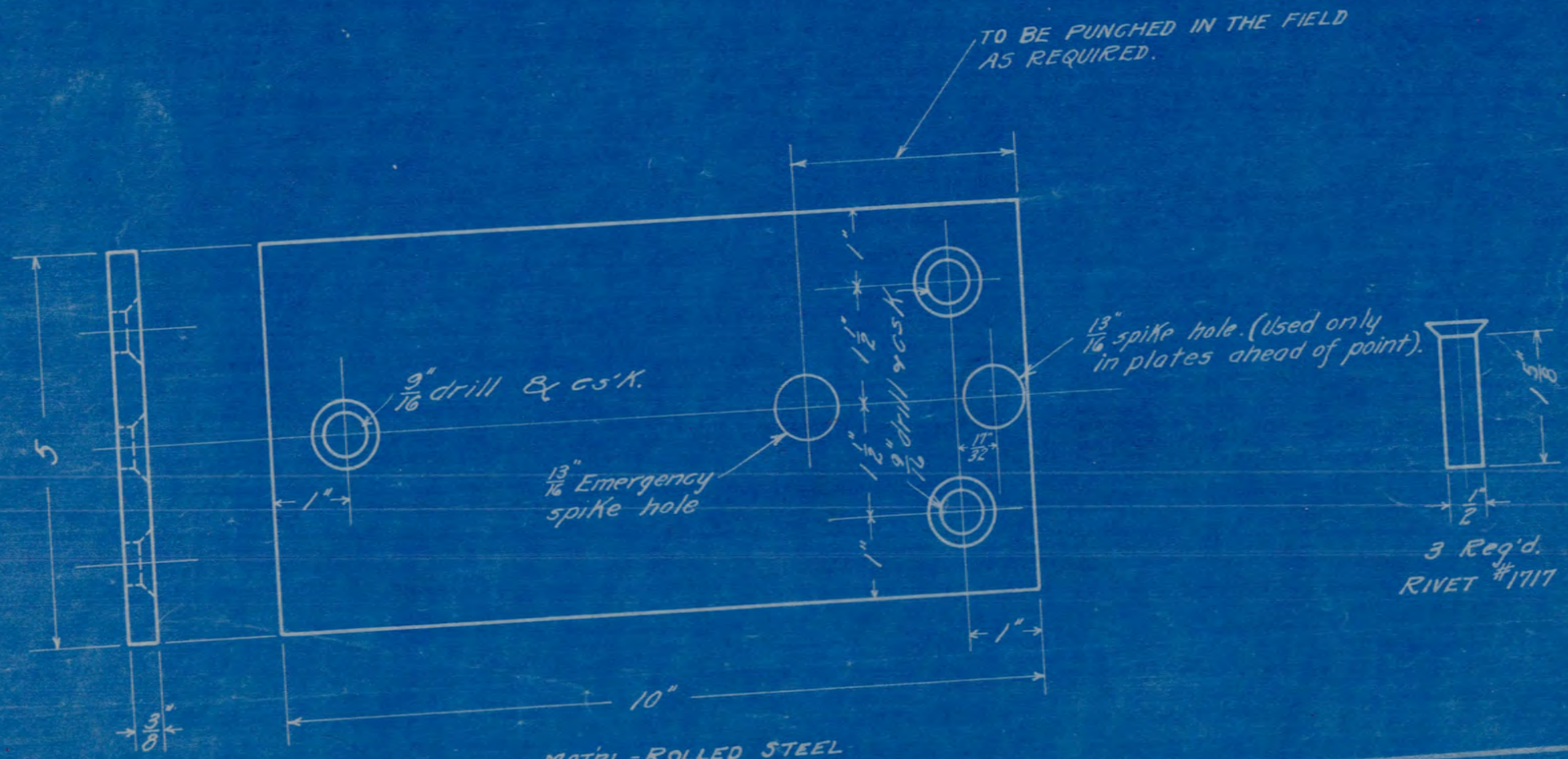
Chief Engr. Signal Engr.

Redrawn, Supersedes A-171 of 9-12-28.

Drawn Feb. 13, 1929.

A—171

Scale: 1 1/2" = 12"


TO BE PUNCHED IN THE FIELD AS REQUIRED.
9/16 drill & c's'k.
13/16 Emergency spike hole
13/16 spike hole. (Used only in plates ahead of point).
1/2 dia. holes
3 Req'd. RIVET #1717
5
10"
3/8"
MATRL. - ROLLED STEEL #1716

NOTE:- FOR GAUGE PLATE COMPLETE SEE A-171, SHEET 2.

A.C.L.R.R.

St'd. Riser Plate and Rivets.

Signal Engrs. Office: Wilmington, N.C.

Approved _____ Chief Engr.

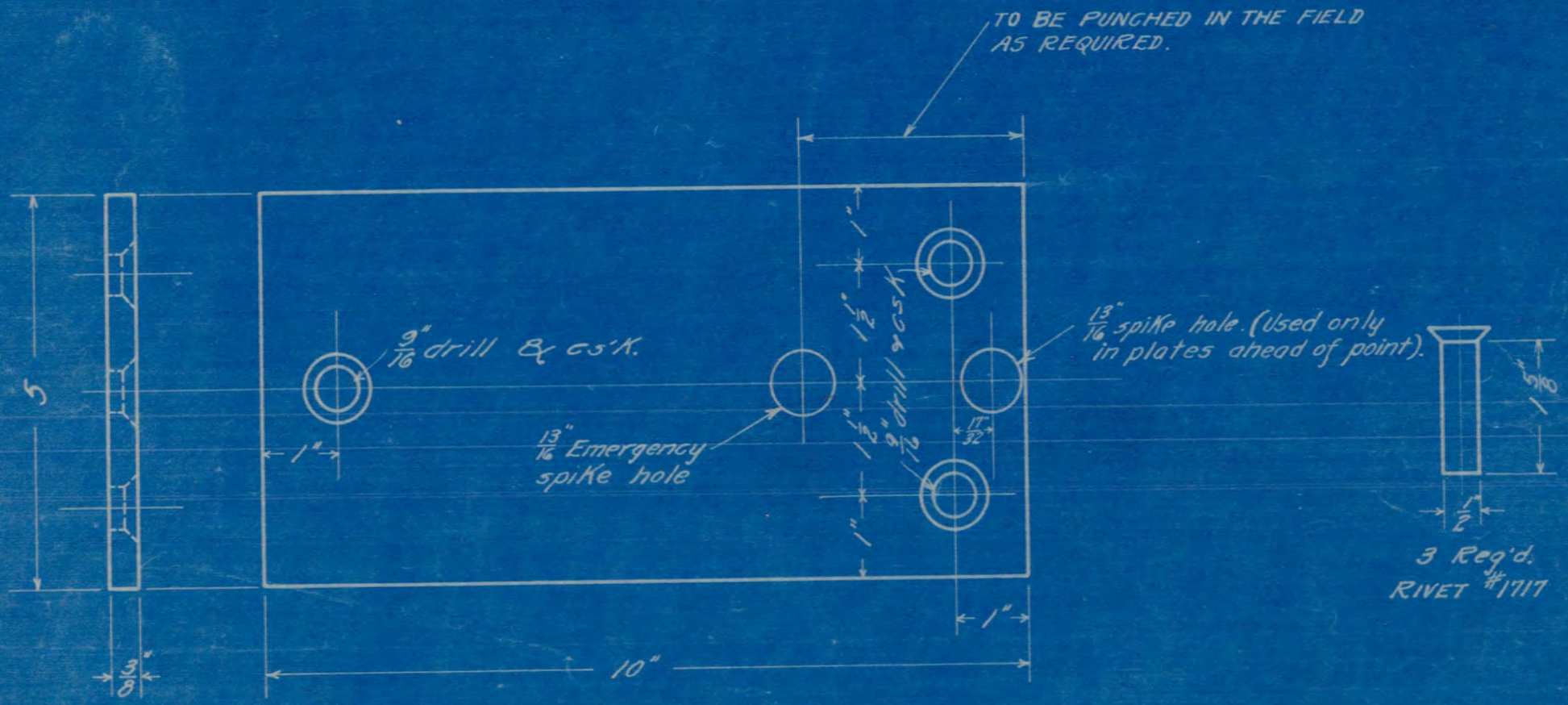
Correct _____ Supt. Signals.

WAS A-104 FEB. 13, 29.	EMERGENCY SPIKE HOLE ADDED. RIVET WAS 1 3/4". 8-23-27.	Spike hole added 11-8-26.	Supersedes A104 of April 1, 1911	Drawn W.E.H. June 9th. 1925	A-171

Scale 1/2 Size.

SHEET 4 OF 4.

Sheet 5 of ____ 3 Prints



MATRL.- ROLLED STEEL
#1716

NOTE:- FOR GAUGE PLATE COMPLETE SEE A-171, SHEET 2.

A.C.L.R.R.

St'd Riser Plate and Rivets.

Signal Engrs. Office: Wilmington, N.C.

Approved: Chief Engr.

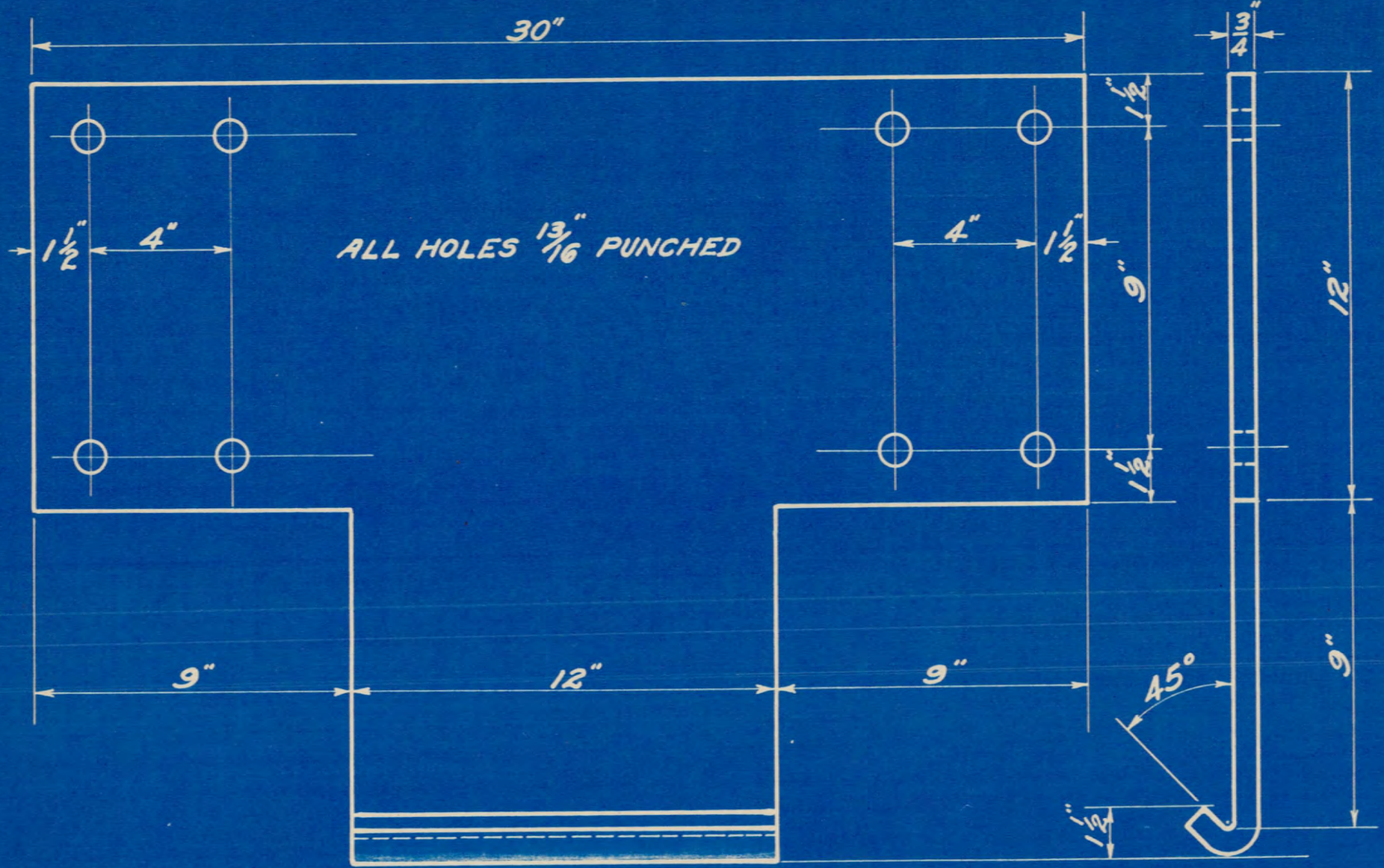
Correct: Supt. Signals.

Drawn W.E.H. June 9th. 1925

A-171

Scale: 1/2 Size.

WAS A-104 FEB. 13, 29.	EMERGENCY SPIKE HOLE ADDED. RIVET WAS 1 3/4. 8-23-27.	Spike hole added. 11-8-26.	Supersedes A104 of April 1, 1911	



MATRL.- ROLLED STEEL

FOR APPLICATION SEE A-52 SHEET 10.

A. C. L. R. R.

HEEL PLATE FOR SPRING SWITCH

Supt. of Signals Office: Wilmington, N. C.

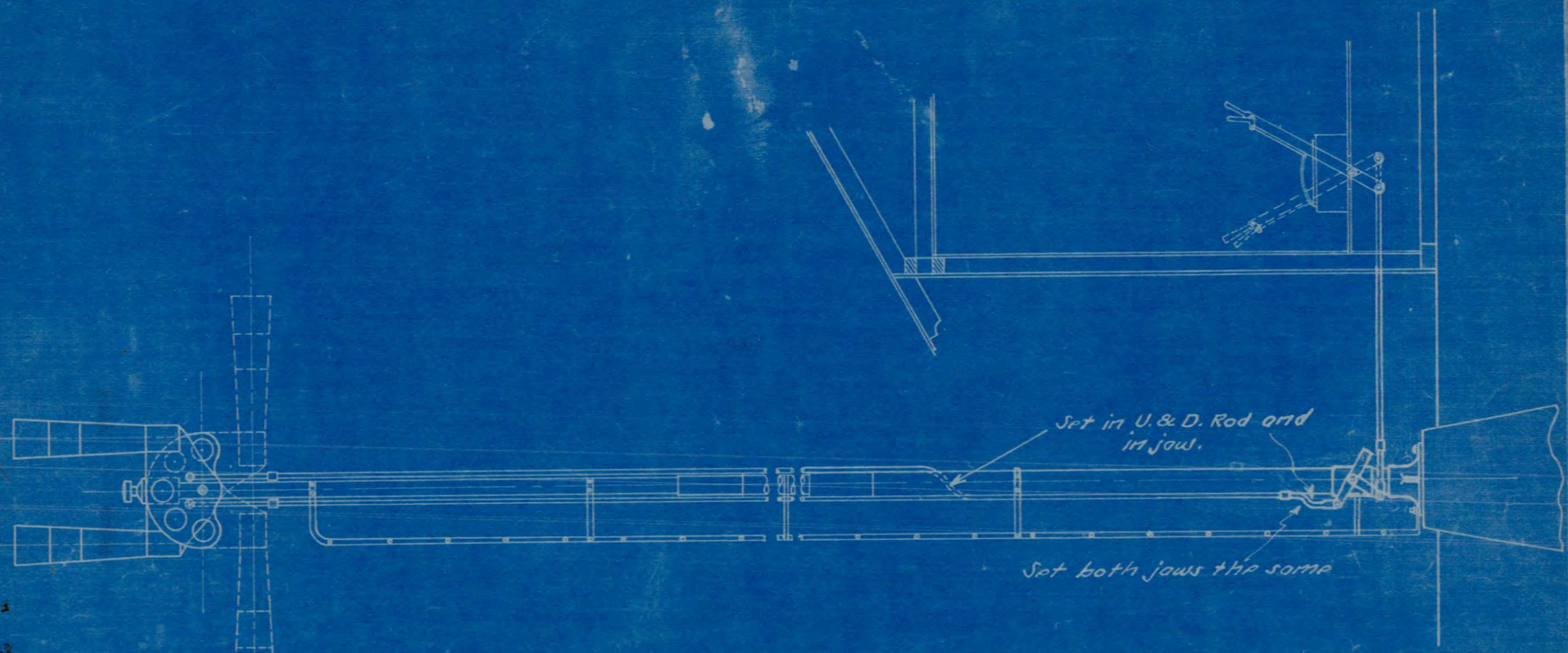
Approved Correct

Chief Eng'r.		Supt. of Signals.
Drawn C.A.W. DEC. 30, 1931.		A-171

Revisions.

Scale: 3" = 12"

Sheet 5 of ____. 3 Prints



A.C.L.R.R.

St'd. 2 Arm Train Order Signal.

Signal Engr's. Office Wilmington, N.C.

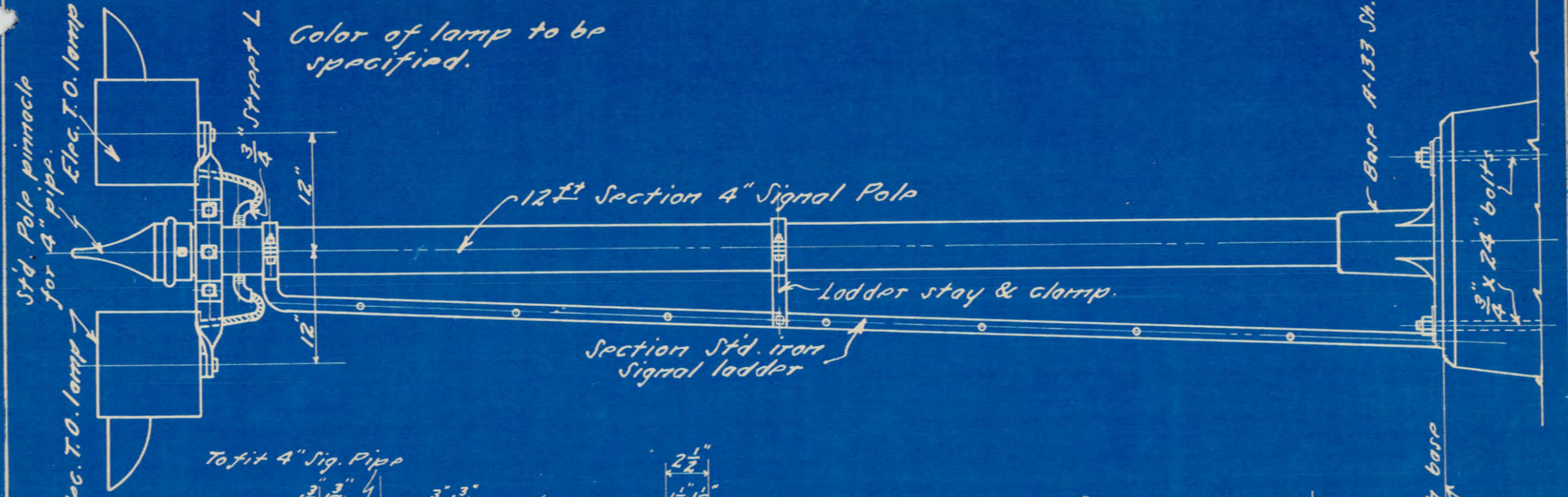
Approved Correct

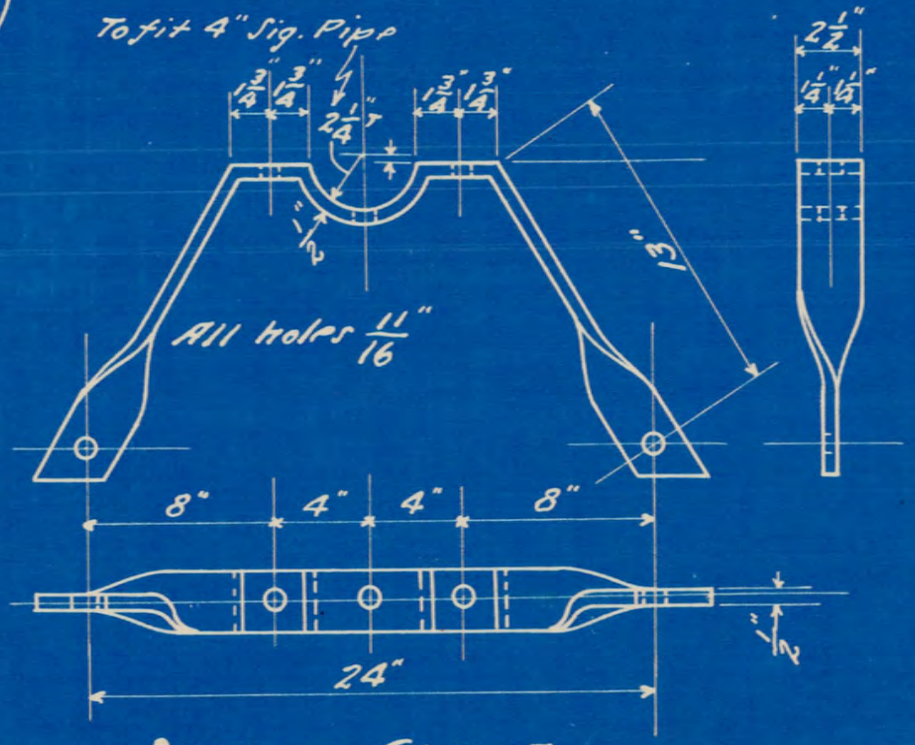
Chief Engr. Supt. Signals.

Scale $\frac{3}{8}$" = 12"

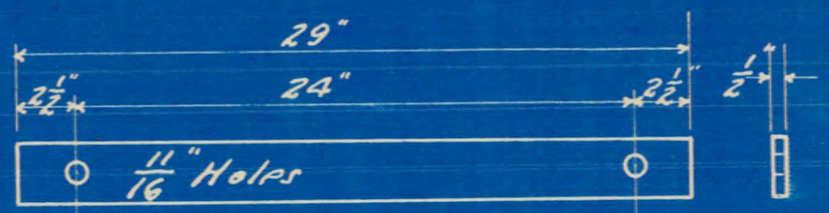
	Revised 3-25-29 Revised 4-20-29.	CHANGED POSITION OF CRANKS. 5-31-27.	Drawn W.E.H. Nov. 17, 1924.	A-173

Sheet 1





SPECIAL CLAMP
2 Rpq'd.



Holes for mounting lamps to be drilled on ground. Lamps to be spaced 14"

STRAP FOR LAMP SUPPORT.
2 Rpq'd.

A. C. L. R. R.

Electric Train Order Signal.

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

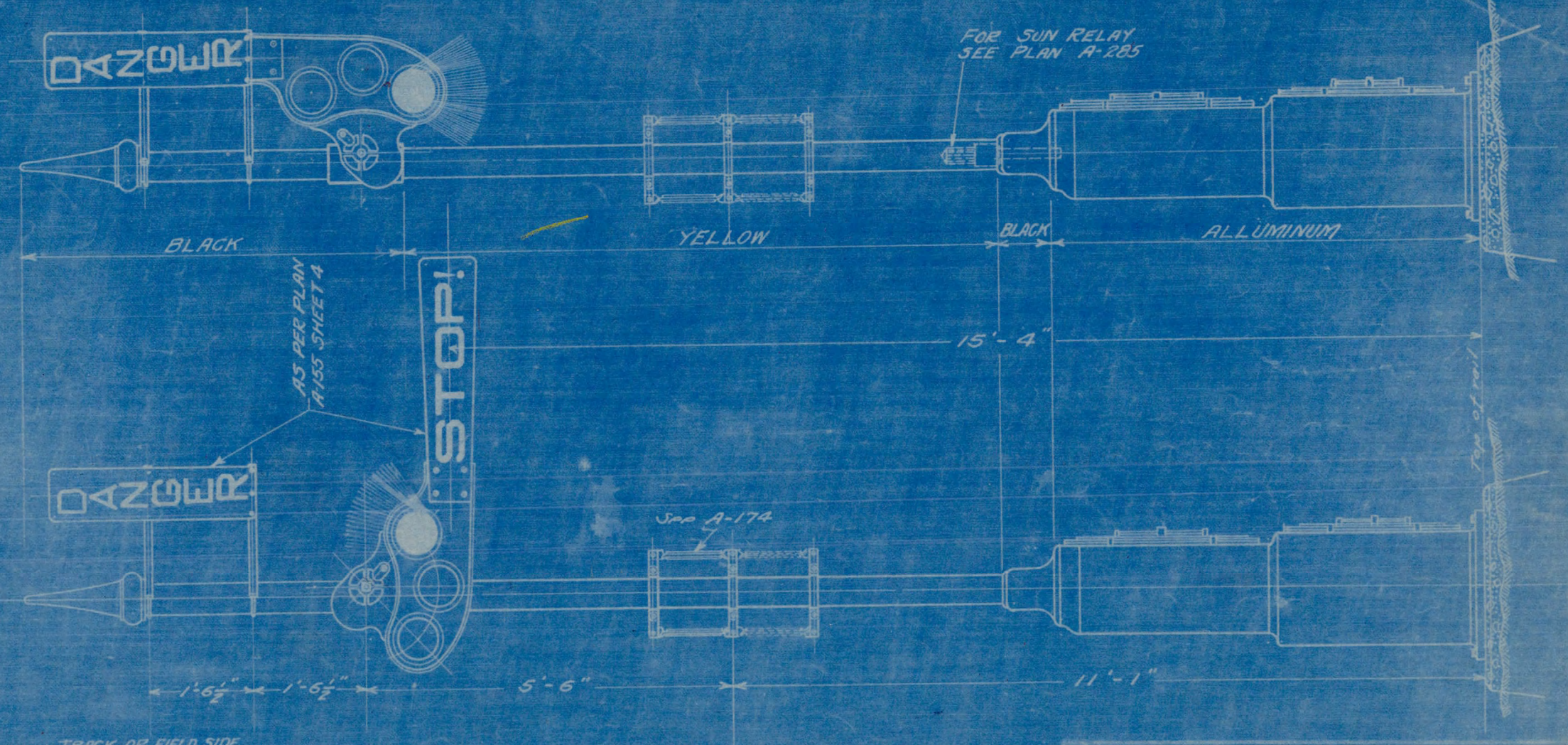
Drawn Leard. Nov. 13, 1929.

A-173

Revisions,

Scale:

Sheet 3 of ____. 14 Prints



BOLT CENTERS FOR LARGE & SMALL TYPE CASES.

Scale ½" = 12"

NOTE- ALL FITTINGS, LADDER AND STAYS TO BE PAINTED BLACK. LADDER CLAMPS, YELLOW.

	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED. 7-9-29
WAS A-177 FEB. 7, 29	BOLT CENTERS FOR CASES ADDED 11-2-26.

A.C.L.R.R.

Crossing Signal for Streets & Highways. Complete.

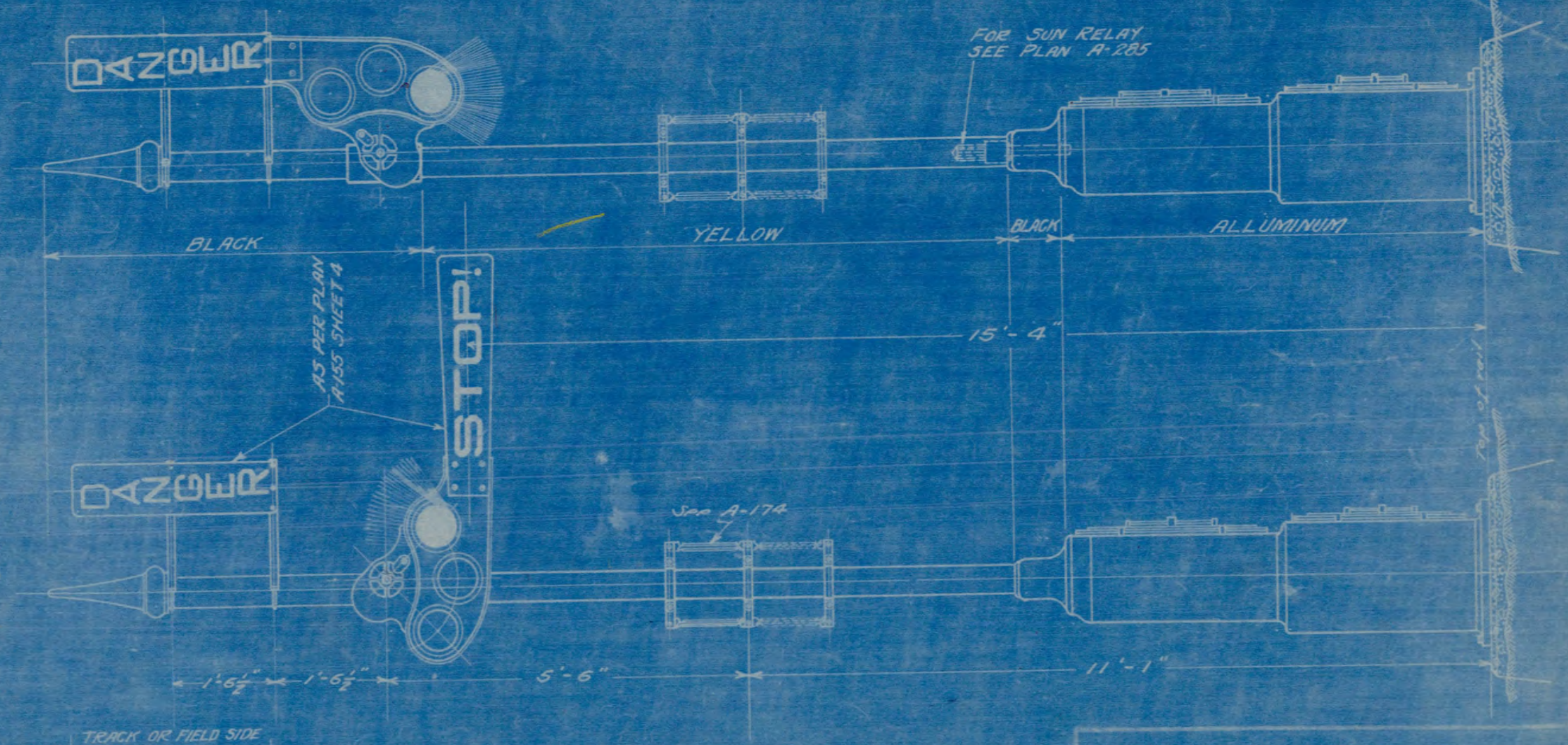
Signal Engrs. Office Wilmington, N.C.

Approved _____ Correct _____

Chief Engr. Signal Engr.

Drawn _____ Feb. 8, 1917.

A—174



BOLT CENTERS FOR LARGE & SMALL TYPE CASES

Scale ½" = 12"

NOTE- ALL FITTINGS, LADDER AND STAYS TO BE PAINTED BLACK. LADDER CLAMPS, YELLOW.

	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED 7-9-29
WAS A-177 FEB 3, 29	BOLT CENTERS FOR CASES ADDED 11-2-28

A.C.L.R.R.

Crossing Signal for Streets & Highways. Complete.

Signal Engrs. Office Washington D.C.

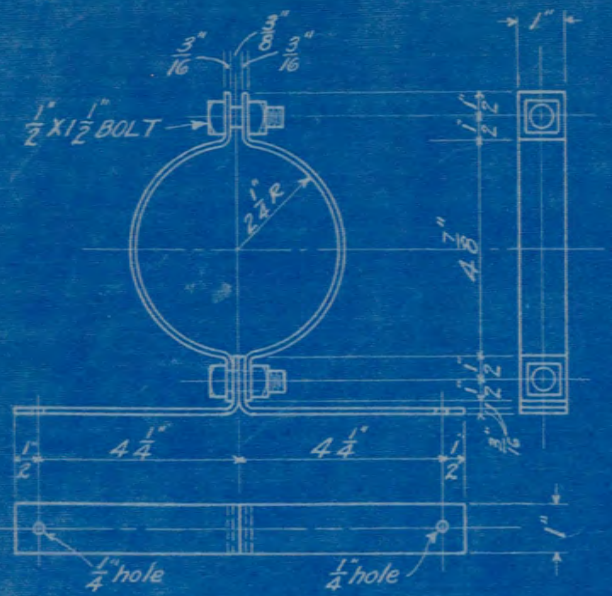
Approved [illegible] Engr.

Correct [illegible] Engr.

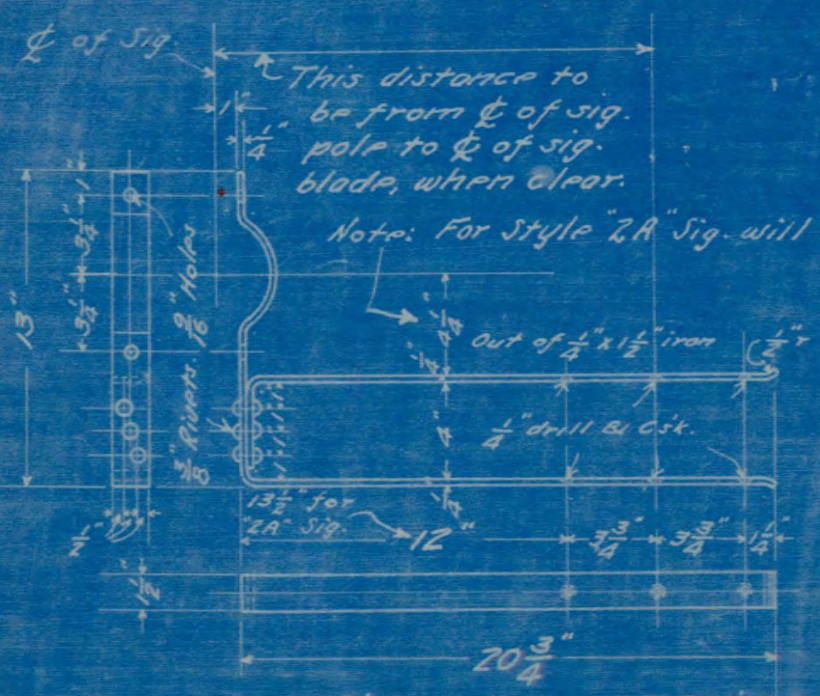
Drawn [illegible] Feb. 6. 1917.

A—174

SHEET 1 OF 3



Pole Clamp 2 Req'd.
#1764
Scale 3" = 12"



Sign Support 2 Req'd.
Scale 1 1/2" = 12" = 3'-12" #1761

U bolt-nuts & lock washers.
#1762.
2 Req'd.

#10-30 x 1/2" C.H. brass Mach. Screw & nut.
#1763
12 Req'd.

A.C.L.R.R.

Crossing Signal for Streets & Highways. Details.

Signal Engrs. Office. Wilmington N.C.

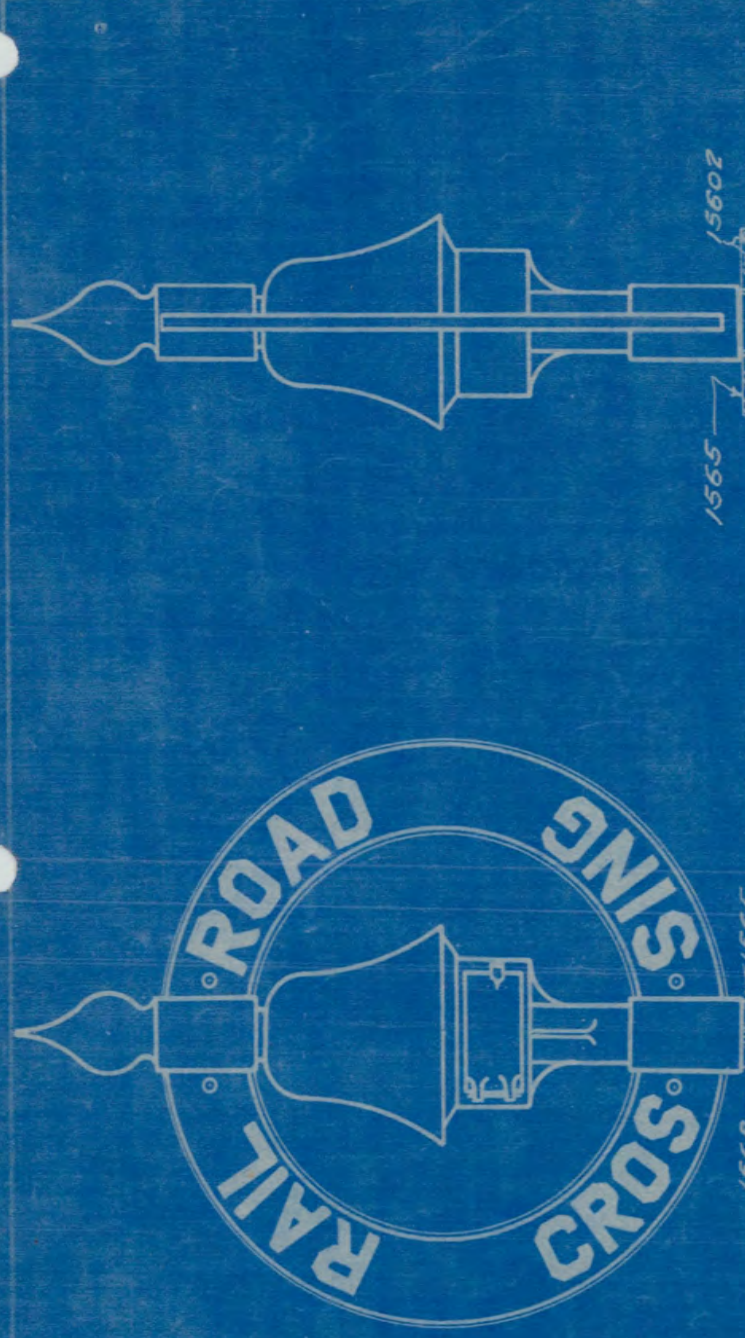
Approved _____ Correct

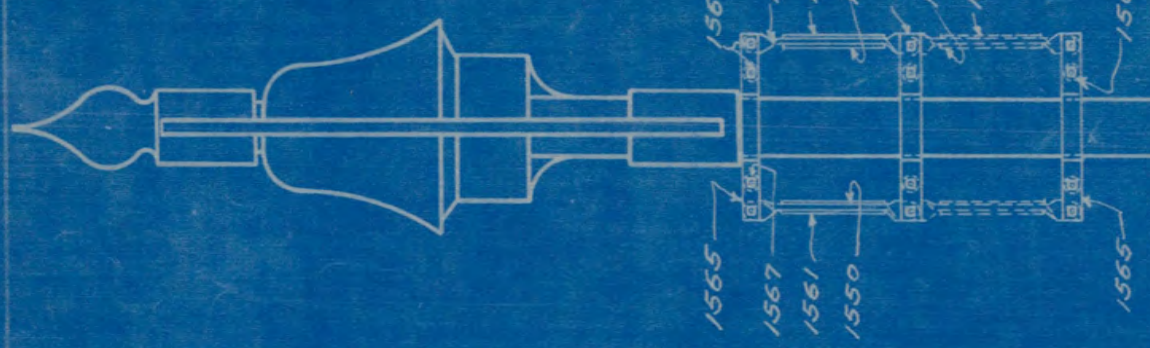
_____ Chief Engr.

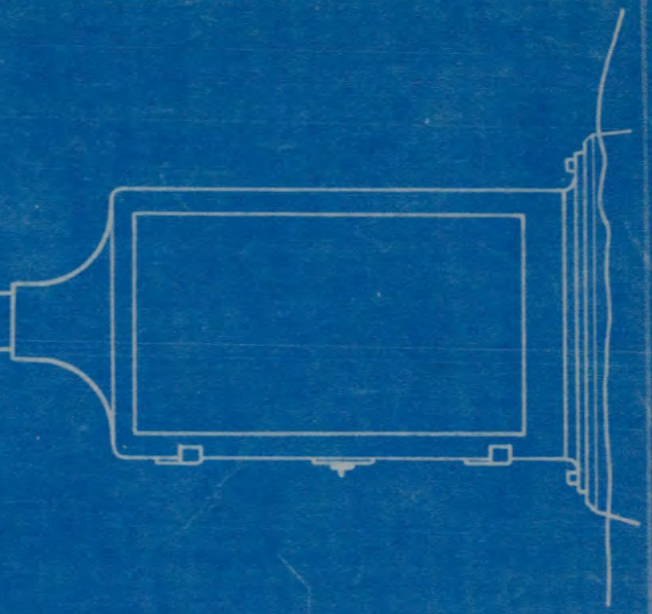
_____ Signal Engr.

POLE CLAMP ADDED 7-8-29	WAS A-176. FEB 9, 29.	Drawn Feb. 7 1917.		A—174

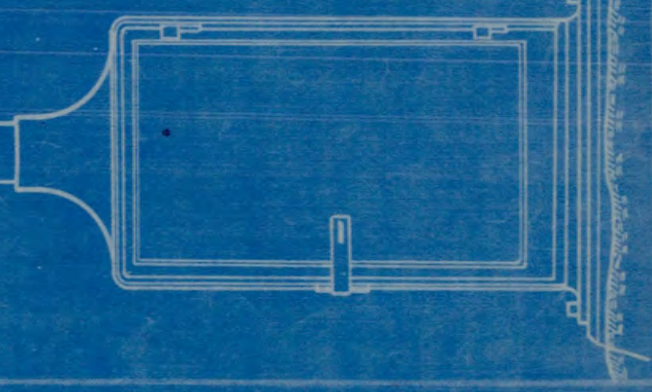
SHEET 2 OF 3







Side view



Front & Rear view

#1740 Number plate, with any specified number, and sign complete.

Reqd. for One bell location.

Req'd.	Name	No.
2	Signs	1550
Note "a"	Figures	1551
" "a"	Letters	1552
" "b"	Plates, Size S	1561
3	Straps	1565
4	Separaters	1566
6	Fillers	1567
2	Hangers	1568
Note "c"	R.H. brass screws & nuts	1569
7	C.H. Rivets	15601
12	Sq. hd. bolts & nuts	15602

Notes:
"a" Figures #1551 & letters #1552 will vary as to number of each bell location.
"b" Plates will vary as to length, according to size of number.
"c" Each letter or figure will req. 4 R.H. brass screws & nuts #1569
For details see A-155

Scale $\frac{3}{4}$" = 12"

A.C.L.R.R.

Std. number plate for sign for street crossing alarms. Complete.

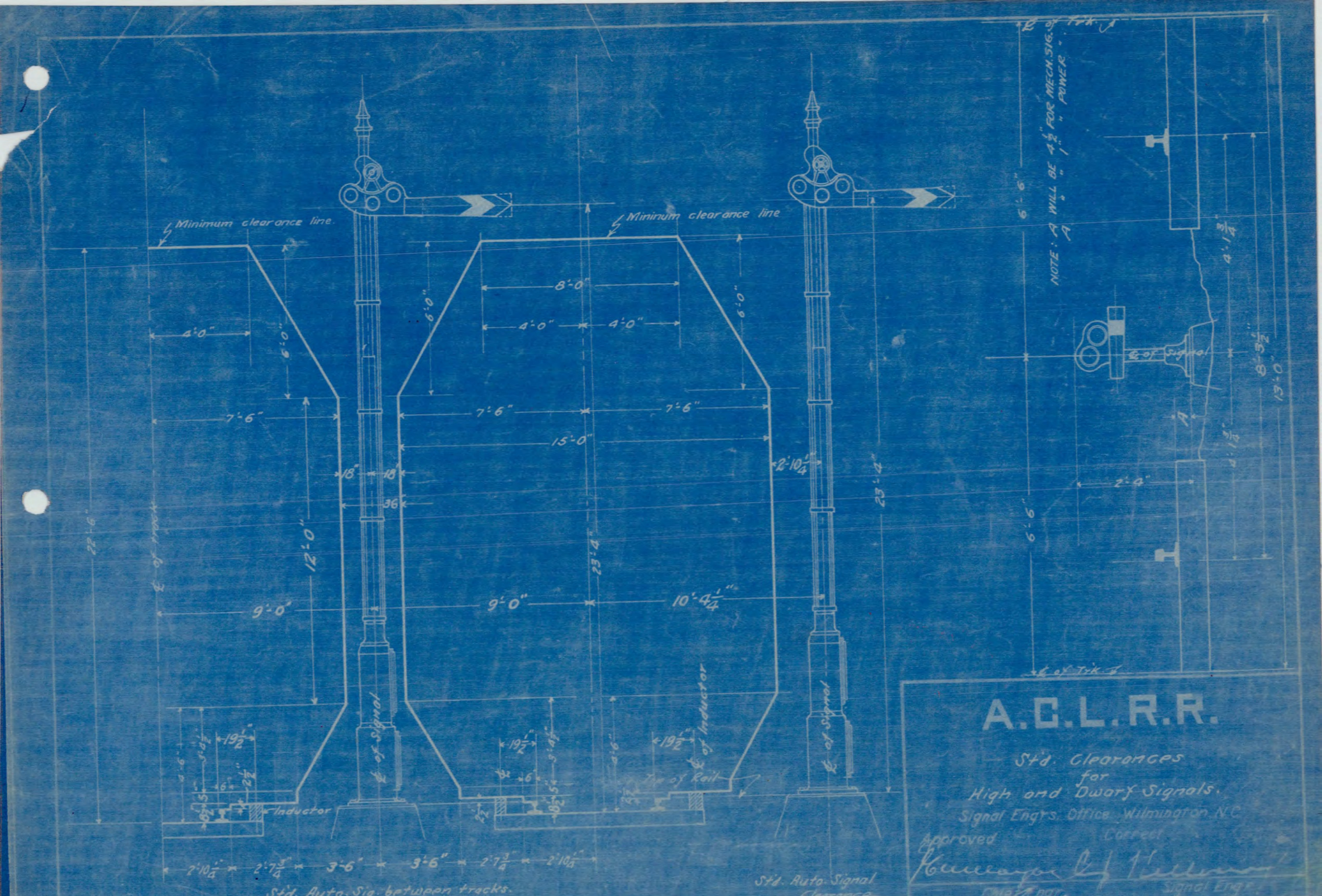
Signal Engrs. Office, Wilmington N.C.

Approved [illegible] Correct

[illegible]
Chief Engr.

Nov. 18, 1916.

A-174



A.C.L.R.R.

Std. Clearances for High and Dwarf Signals.

Signal Engrs. Office, Wilmington N.C.

Approved _____ Correct _____

_____ Chief Engr. _____ Signal Engr.

Note: Dimensions shown are for Minimum Clearances.

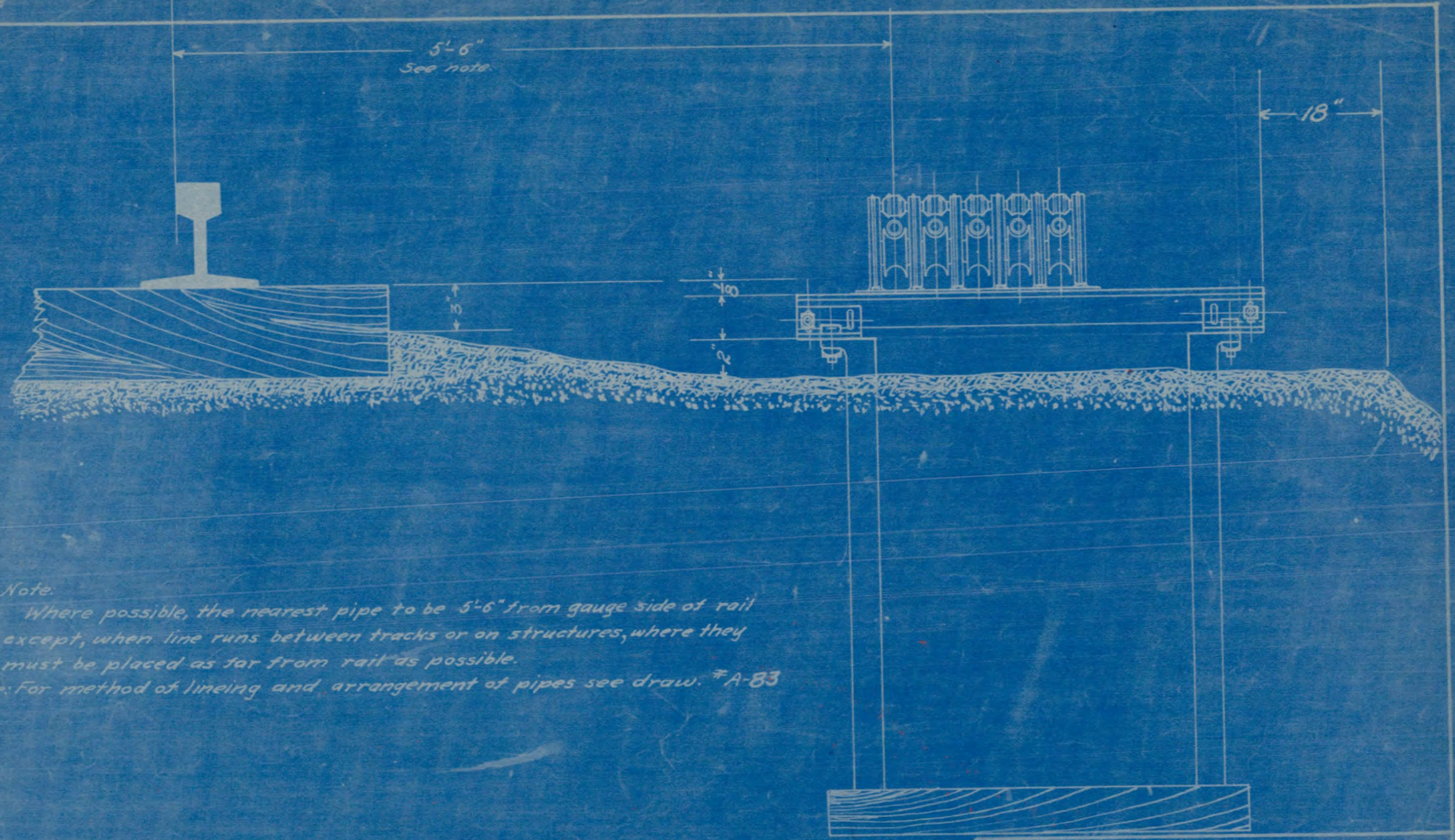
Scale

Revised 1-26-29	NOTE FOR HEIGHT OF FOUNDATION FOR POWER DWARF SIGS ADDED. 2-14-28	Revised 8-1-21 Revised 7-8-24.	Superseding A-16 of 5-13-08, A-17-18 of 4-13-11 & 8 Dec. A-179 of 3-20-18

Drawn Apr. 12 1920.

A-179

Sheet 1 of 3



Note.

Where possible, the nearest pipe to be 5'-6" from gauge side of rail except, when line runs between tracks or on structures, where they must be placed as far from rail as possible.

Note: For method of lineing and arrangement of pipes see draw. #A-83

A. C. L. R. R.

Std. clearance and location of pipe line.

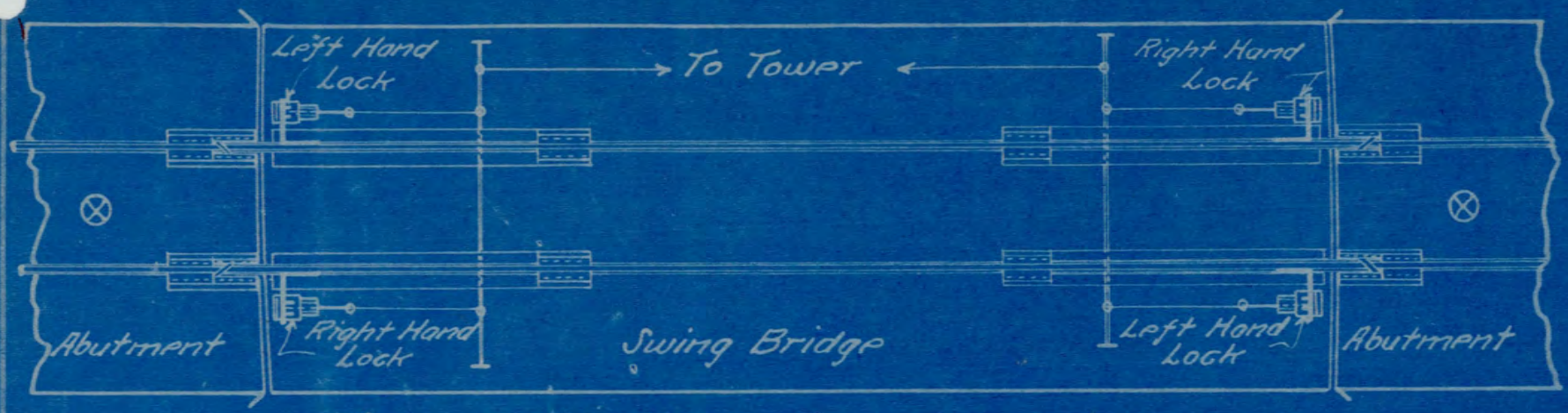
No scale.

Signal Engrs. Office: Wilmington, N.C.

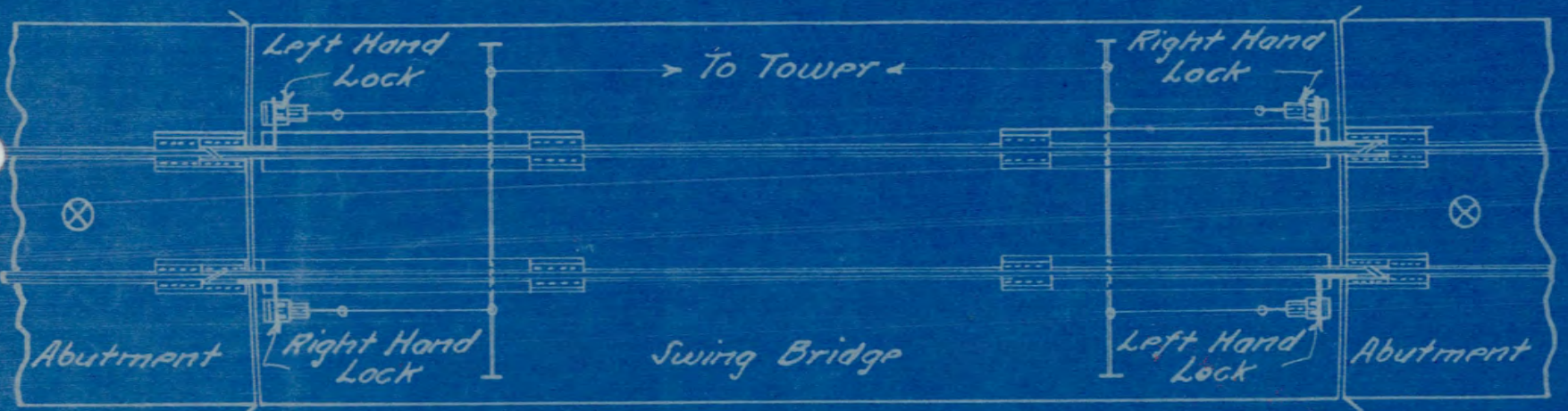
Approved Correct

Chief Engr. Signal Engr.

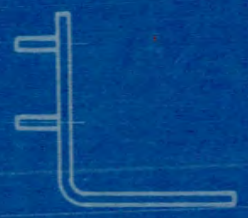
Was A-84 Jan. 26, 1929.	Revised: Distance from gauge to pipe was 4'-6" 12-9-26.	Revised Mar. 19, 1913.	Drawn C.G.W. Sept. 9, 1908.	

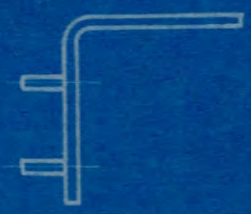


Swing bridge with lock bars from point.

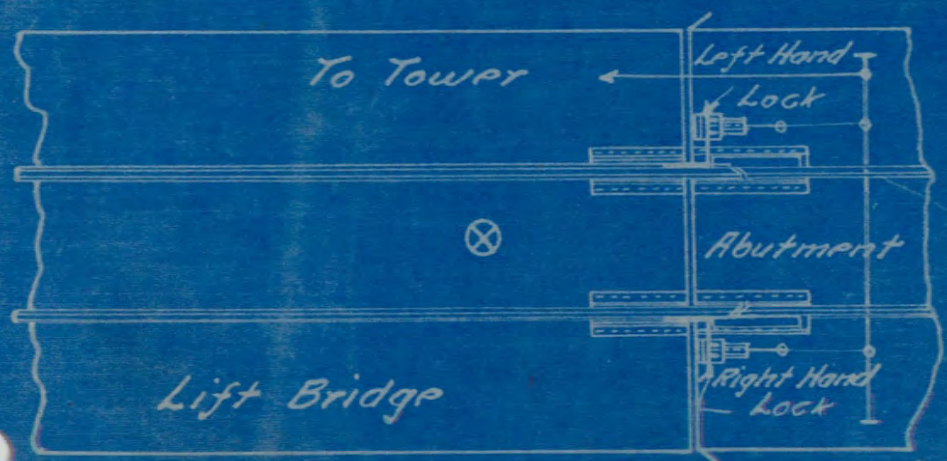


Swing bridge with lock bars toward point.





NOTE: Right and Left determined as viewed from ⊗ See Plans A-144 and 184, for locks.



Lift bridge with lock bars from point.

Scale

A.C.L.R.R.

Lock Bars required for Swing or Lift bridges. Sketch.

Signal Engrs. Office Wilmington, N.C.

Approved

Correct

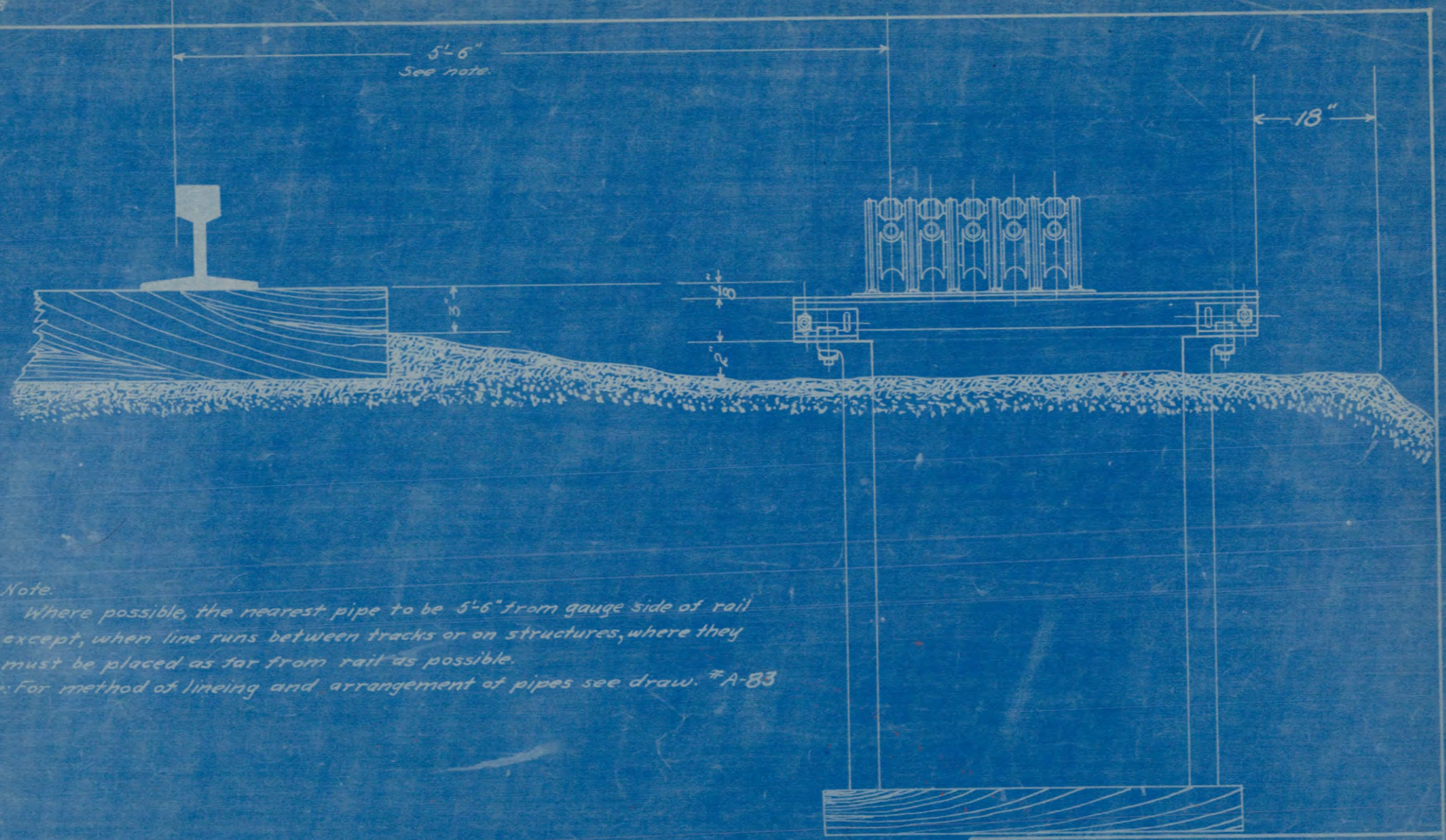
Supt. Signal.

No. of lock bars for swing bridges Changed Mar. 21, 22.

Drawn Mar. 7, 1922.

A-183

Sheet 1



Note.

Where possible, the nearest pipe to be 5'-6" from gauge side of rail except, when line runs between tracks or on structures, where they must be placed as far from rail as possible.

Note: For method of lineing and arrangement of pipes see draw. #A-83

A. C. L. R. R.

Std. clearance and location of pipe line.

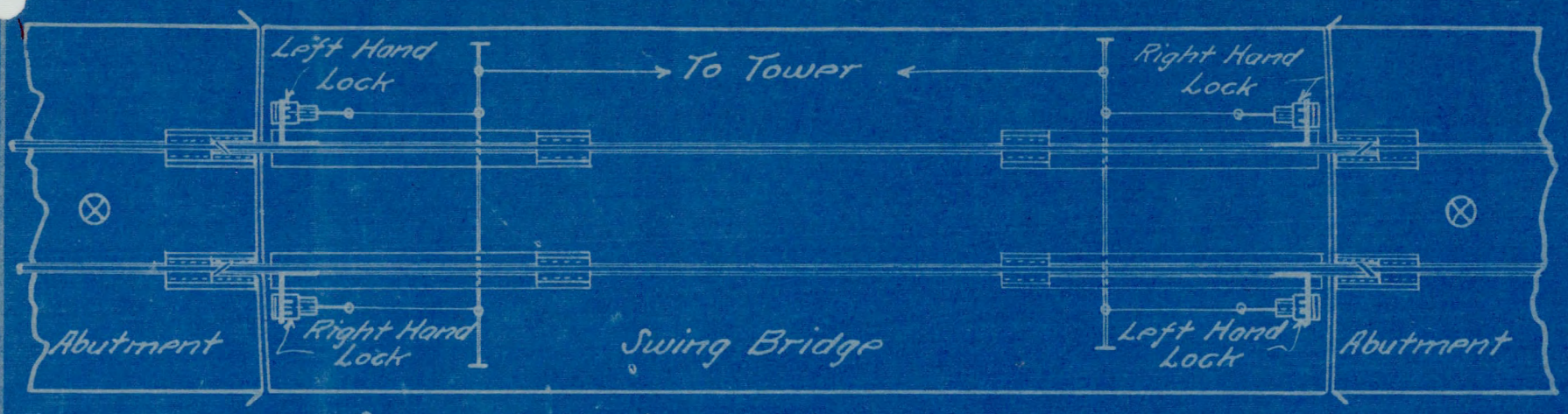
No scale.

Signal Engrs. Office: Wilmington, N.C.

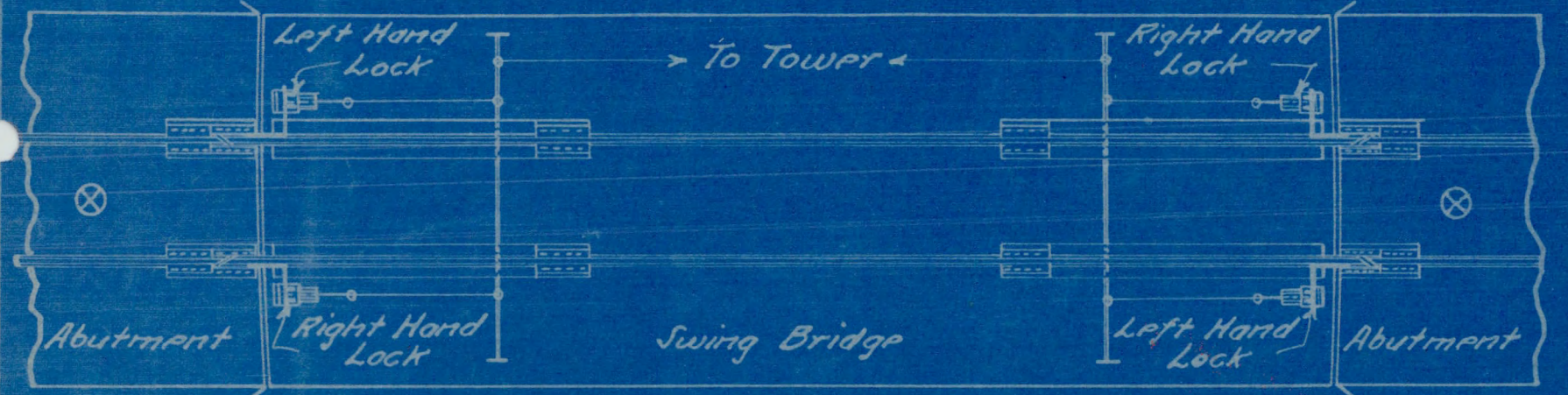
Approved Correct

Chief Engr. Signal Engr.

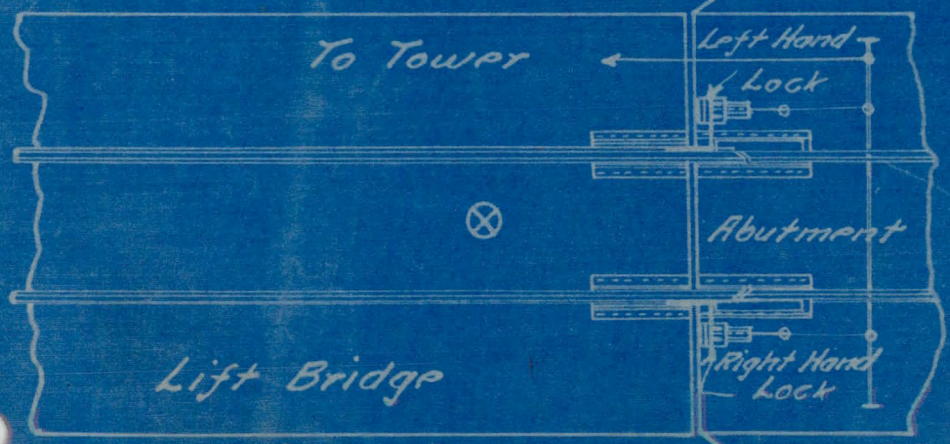
Was A-84 Jan. 26, 1929.	Revised Distance from gauge to pipe was 4'-6" 12-8-26.	Revised Mar. 19, 1913.	Drawn C.G.W. Sept. 9, 1908.	



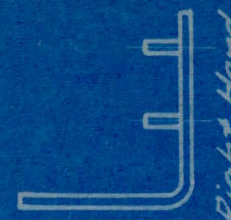
Swing bridge with lock bars from point.

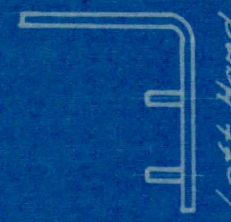


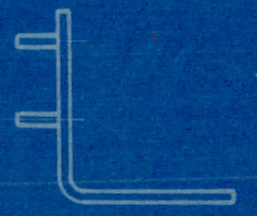
Swing bridge with lock bars toward point.

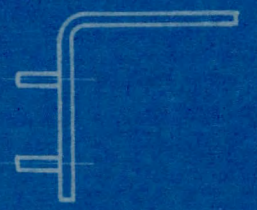


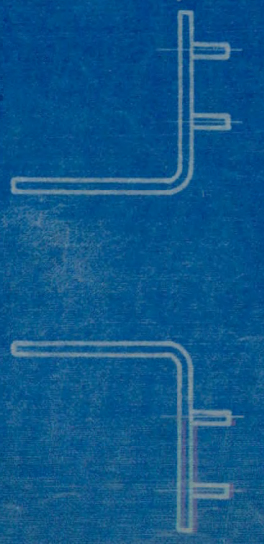
Lift bridge with lock bars from point.











NOTE: Right and Left determined as viewed from ⊗ See Plans A-144 and 184, for locks.

A.C.L.R.R.

Lock Bars required for Swing or Lift bridges. Sketch.

Signal Engrs. Office Wilmington N.C.

Approved Correct

Chief Engr. Supt. Signal.

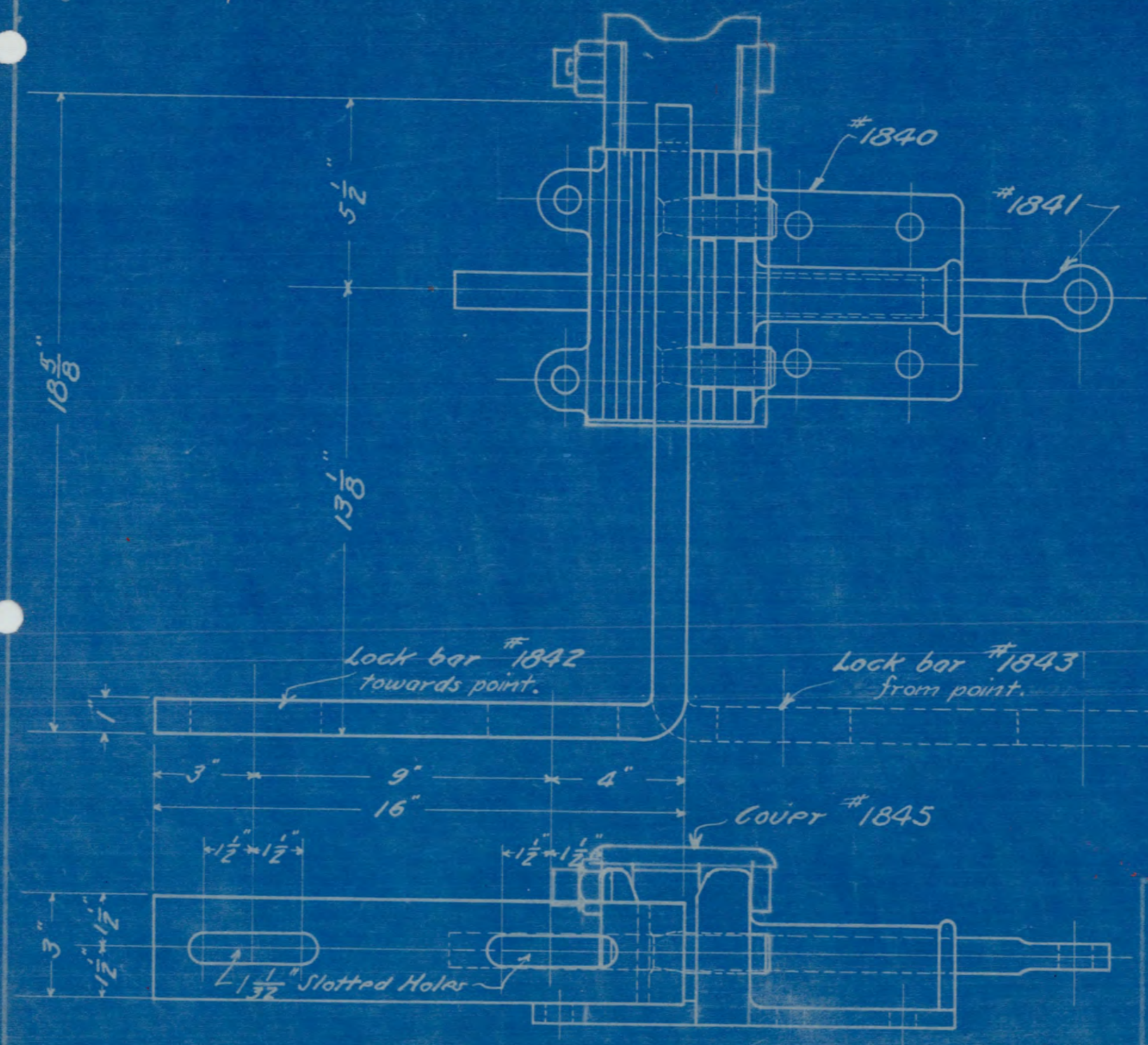
No. of lock bars for swing bridges Changed Mar. 21. 22.

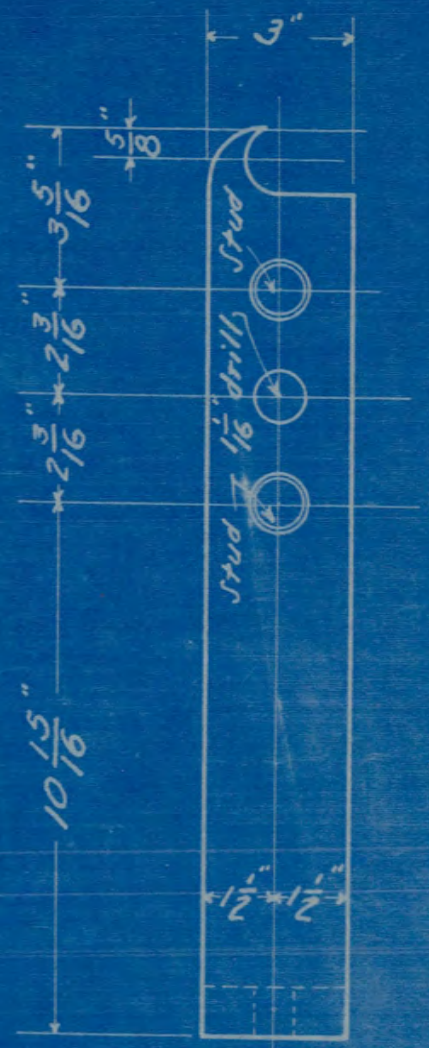
Drawn Mar. 7. 1922.

A-183

Scale

Sheet 1





1-Filler #1444 Req'd.

Scale 3" = 12"

Was A-184 3-25-29	Re 6-9-22 " 12-14-26

A.C.L.R.R.

Stiles

Std. swing bridge rail lock.

Signal Engrs. Office: Wilmington N.C.

Approved [illegible]

Correct [illegible]

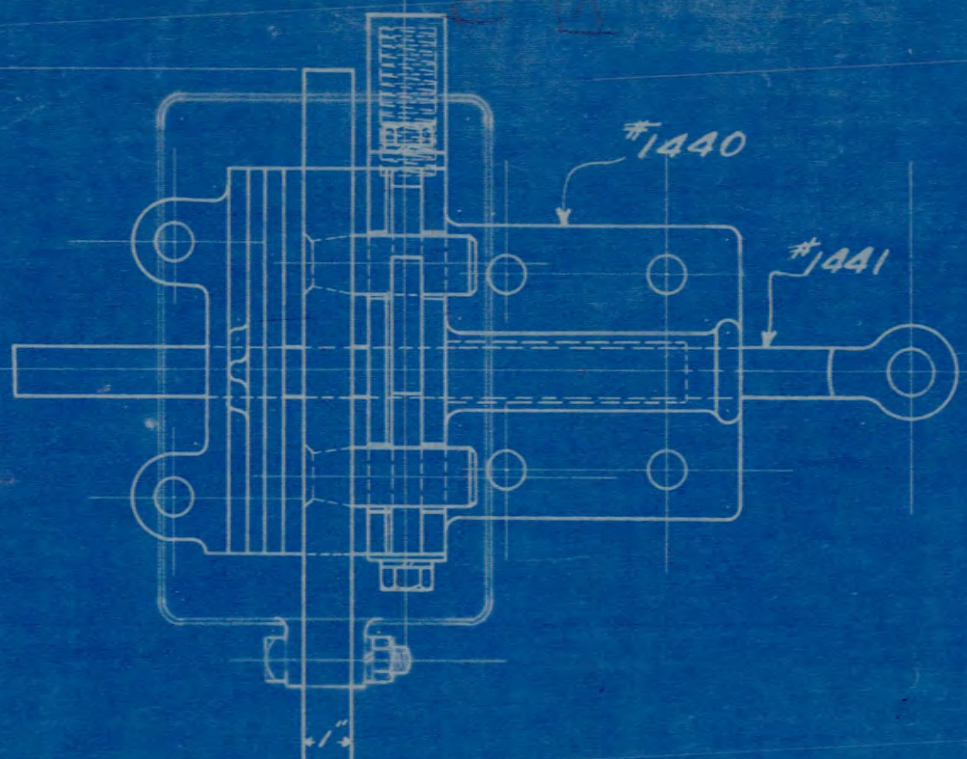
Drawn [illegible]

Traced [illegible]

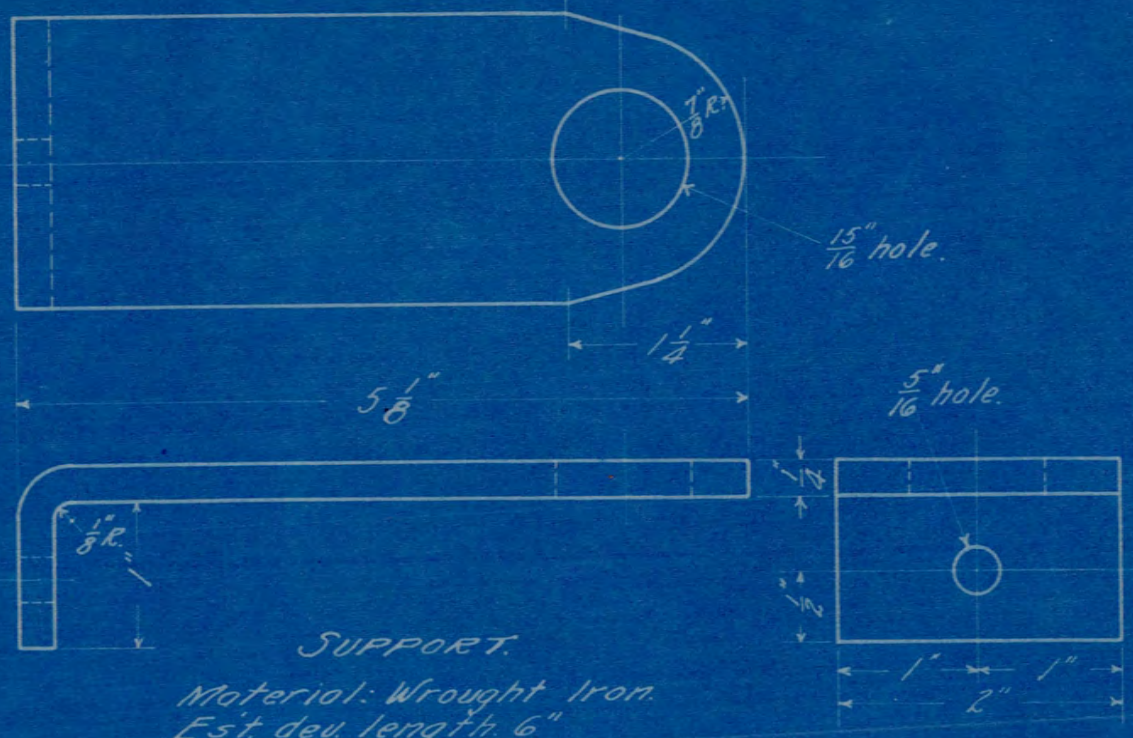
Mar. 21. 1922.

A-183

Sheet 2

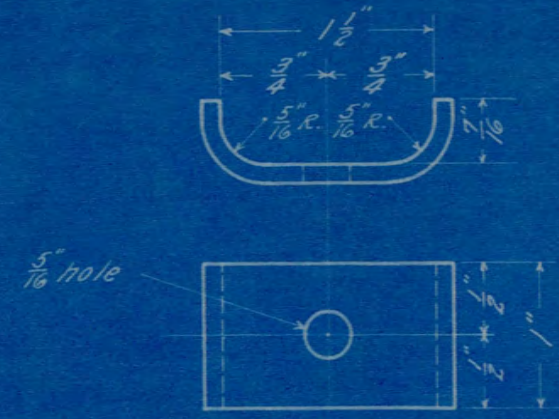

#1440
#1441
1⅛"
Lock bar #1442 from point
Lock bar #1443 towards point.
3"
9"
4"
16"
Coupr #1445
1½"
1½"
1½"

69871 BRISTOL & BRISTOL, NEW YORK



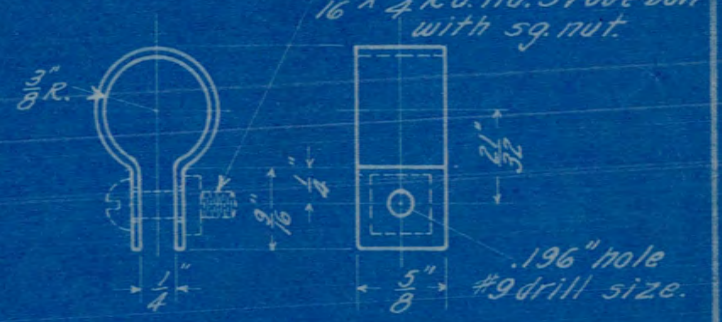
SUPPORT.

Material: Wrought Iron.
Est. dev. length 6"
All sharp corners removed.



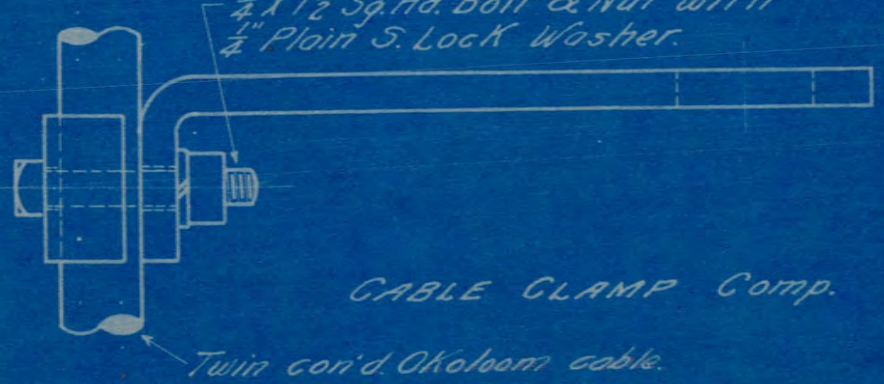
CAP.

Material: #12 Sh. Steel. U.S. Std. Gauge.
Est. Dev. Length 2 5/16". All sharp corners to be removed.



CLAMP.

Material: #16 Sh. Steel. U.S. Std. Gauge.
Est. Dev. Length 3 1/2"



CABLE CLAMP Comp.

Scale 3/4" = 1"

From U.S.+S. Co. drawing B-9943.

A.C.L.R.R.

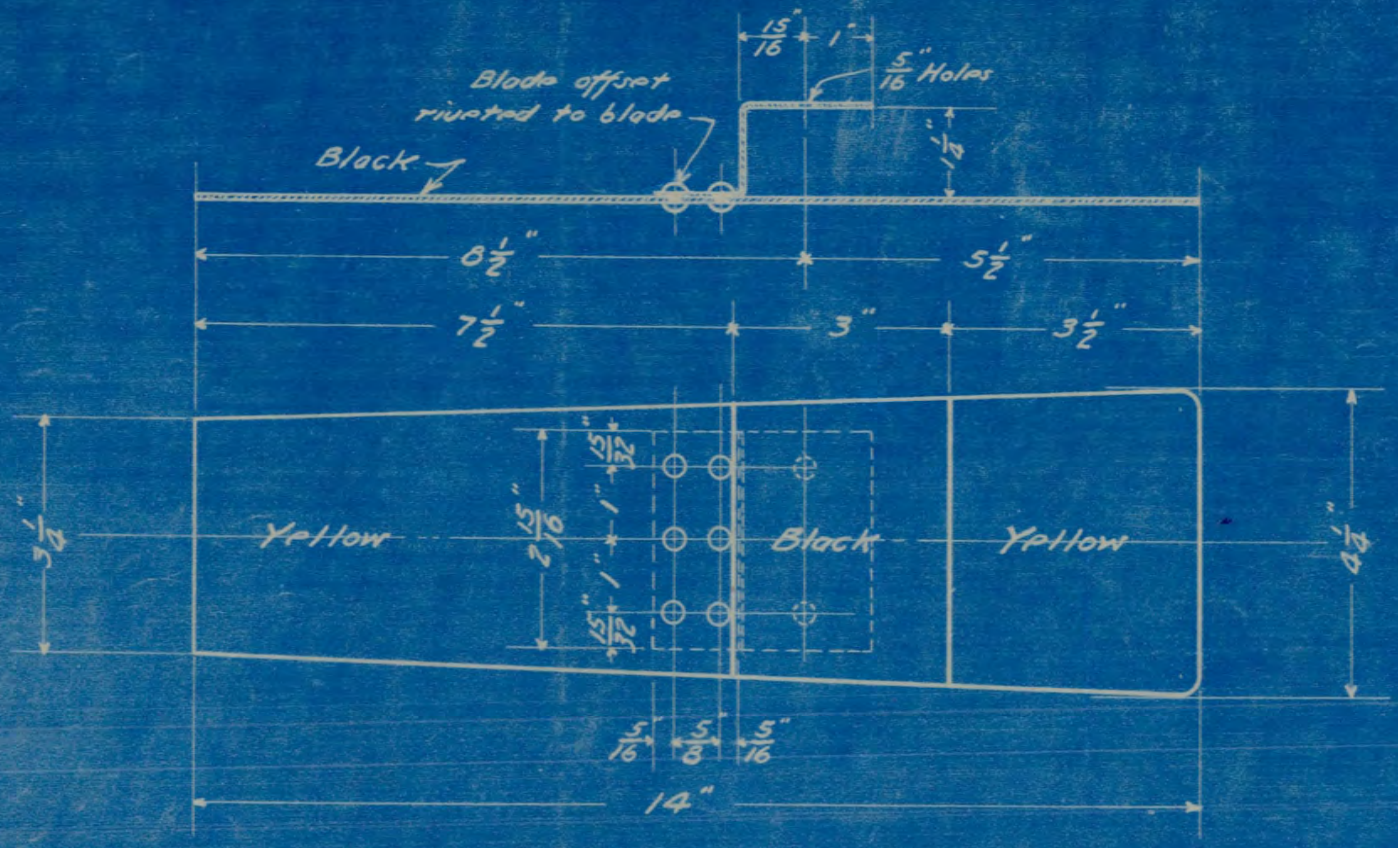
Standard Hangers for Twin Con'd. Okoloom Cable.

Signal Engrs. Office Wilmington, N.C.

Approved Chief Engr.

Correct [signature] Supt. Signals.

Supersedes A 186 of 4-21-22.	Drawn W.E.H. July 2, 1925.		A-186



Notes:

Front of blade Yellow with Black stripe.
Back of blade Black.
Material 18 Gauge.

Scale 3/8" = 1"

A.C.L.R.R.

Std. Enameled Steel dwarf Signal blade.

Signal Engrs. Office: Wilmington, N.C.

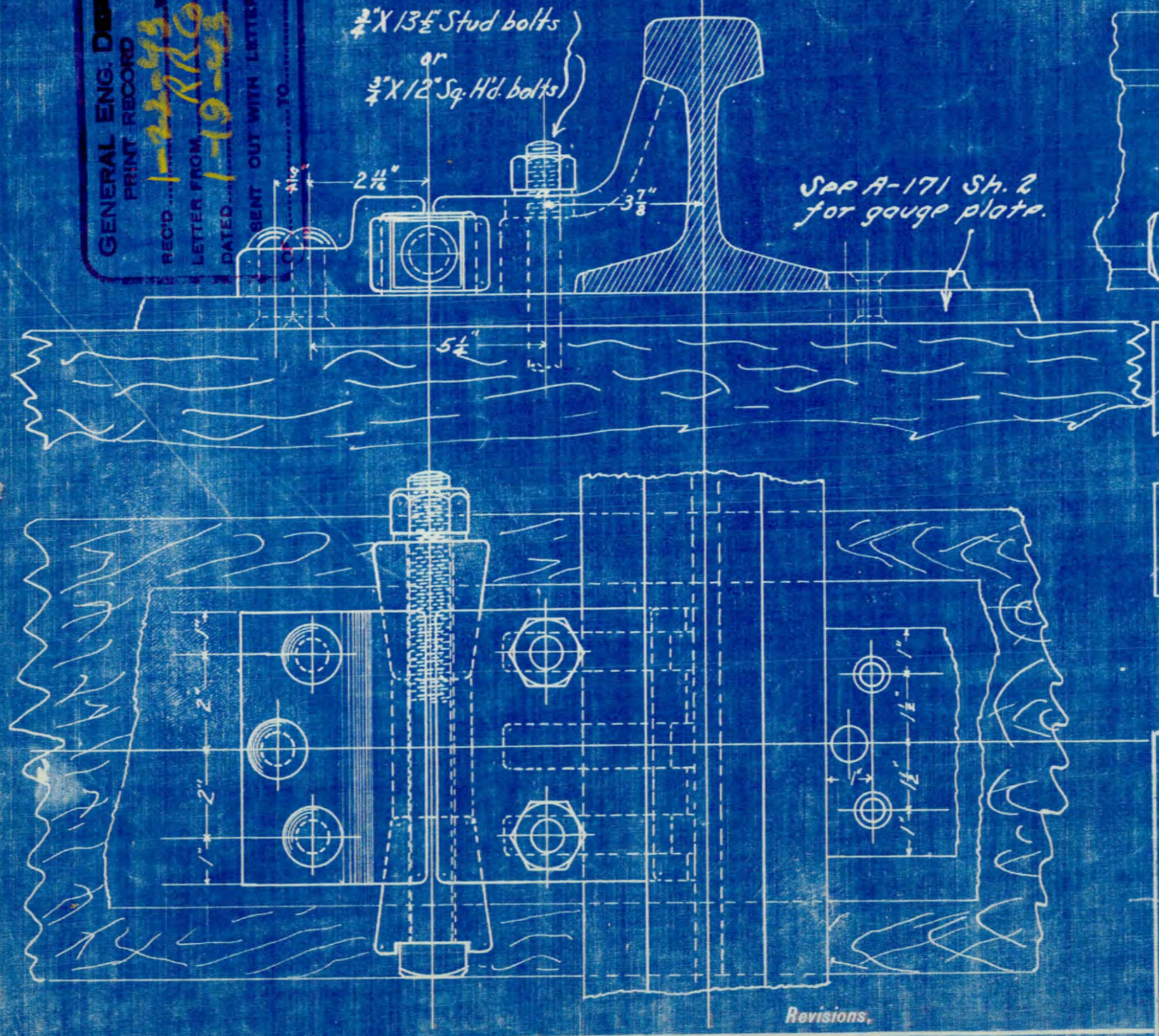
Approved: [illegible]
Chief Engr.

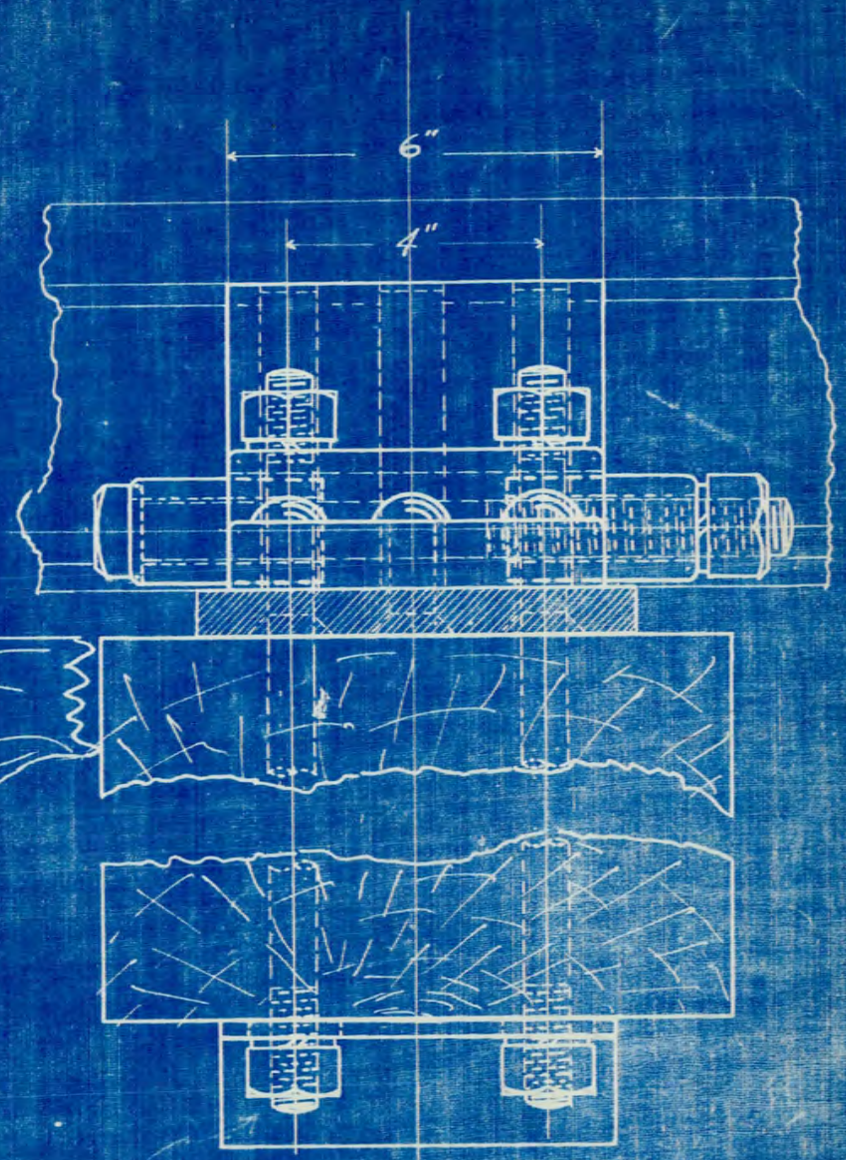
Correct: C. H. Tillinghast
Supt. Signals.

Drawn: [illegible]
Oct. 30, 1922.

A—187

GENERAL ENG. DEPT.
PRINT RECORD
REC'D 1-22-43 WITH
LETTER FROM RKC
DATED 1-19-43
SENT OUT WITH LETTER
TO





ANGLEWASHER NO. 1713 - PLAN A-171

A. C. L. R. R.

MODEL "C" RAIL BRACE
100-LB. RE SECTION RAIL
(STILES' PATENT)

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

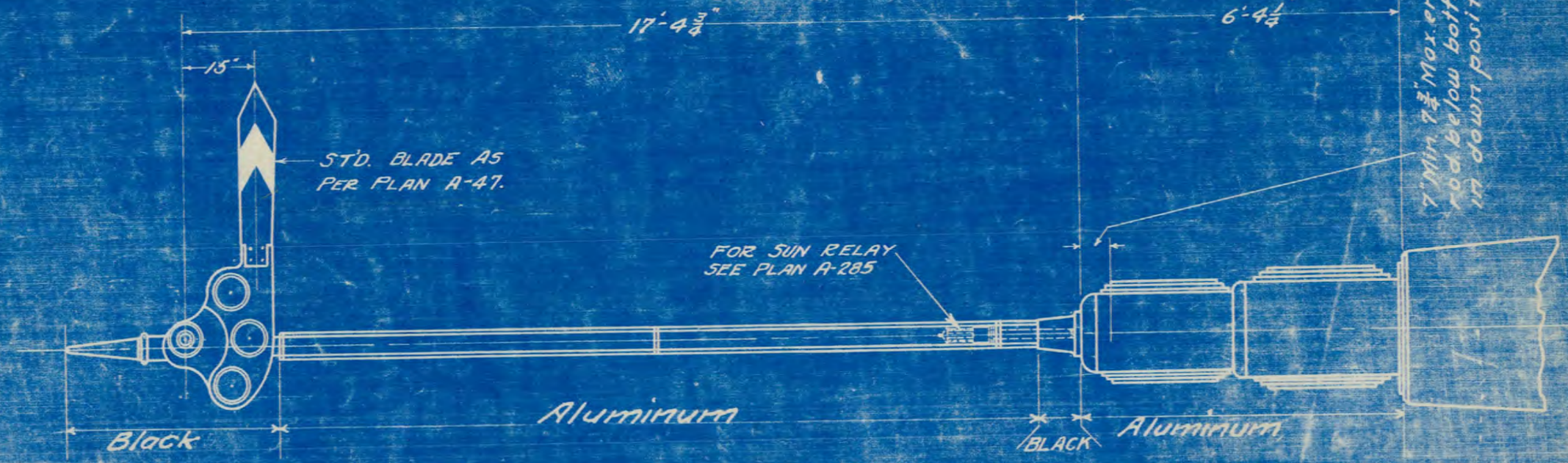
Chief Eng'r. Supt. of Signals.

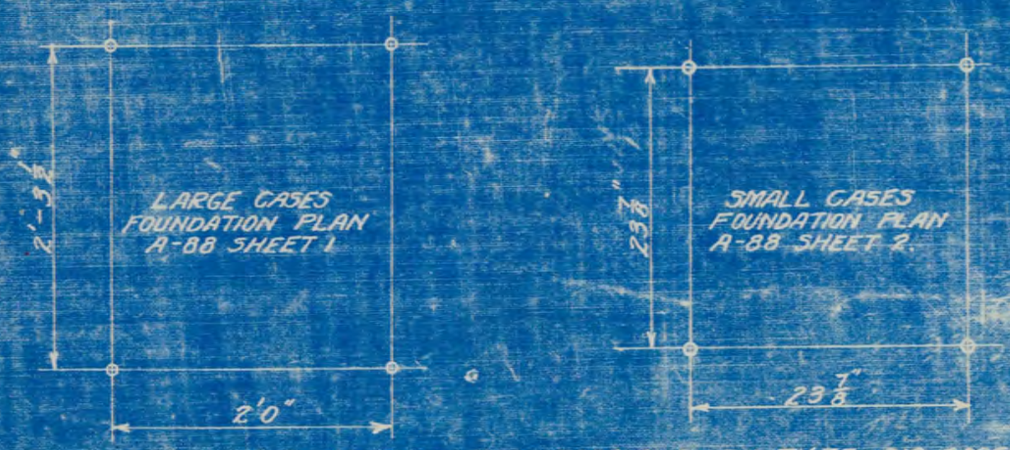
Revisions.

		REVISED 1-12-43. WAS 3¼" CENTER STUD BOLT TO WEB OF RAIL.	Drawn R.S.H. DEC. 6, 1932.		A-190

Scale: 4" = 12"

Sheet 2 of 2 — 3 Prints





BOLT CENTERS FOR LARGE & SMALL TYPE SIG. CASES.

LADDER AND STAYS TO BE PAINTED ALUMINUM.

Revised 2-2-34

A.C.L.R.R.

Std. 1-Arm, 3 Pos., R.H., U.Q., D.C., L.U. Style "S," Elec Ground Signal (Elec. Lighted)

Signal Engrs. Office: Wilmington, N.C.

Approved _____ Chief Engr

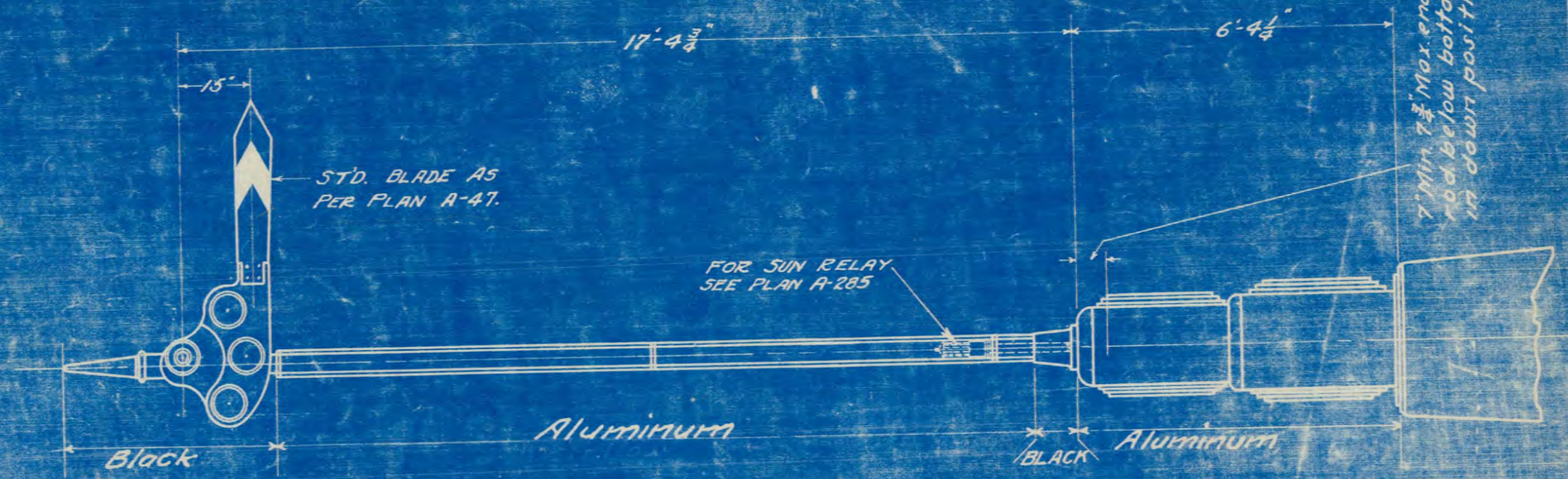
Correct _____ Supt. of Sigs.

Drawn	Traced	
Sept 21, 1923	W.E.H.	A-193

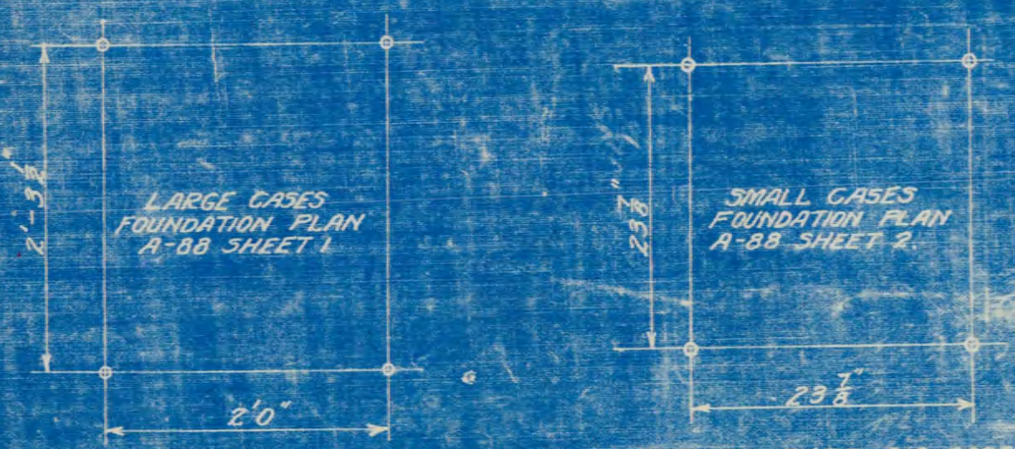
Scale ⅜" = 12"

REVISIONS

Painting of Sig. & Location of Sun Relay added. 7-9-29	Painting Schema Rev. Apr. 1, 1929.	Was. A-194 Feb. 11, 29	Bolt centers for cases added. 11-2-28.



LADDER AND STAYS TO BE PAINTED ALUMINUM.



BOLT CENTERS FOR LARGE & SMALL TYPE SIG. CASES.

Revised 2-2-34

A.C.L.R.R.

Std 1-Arm, 3 Pos, R.H, U.Q., D.C., L.U, Style "S" Elec Ground Signal (Elec. Lighted)

Signal Engrs. Office: Wilmington, N.C.

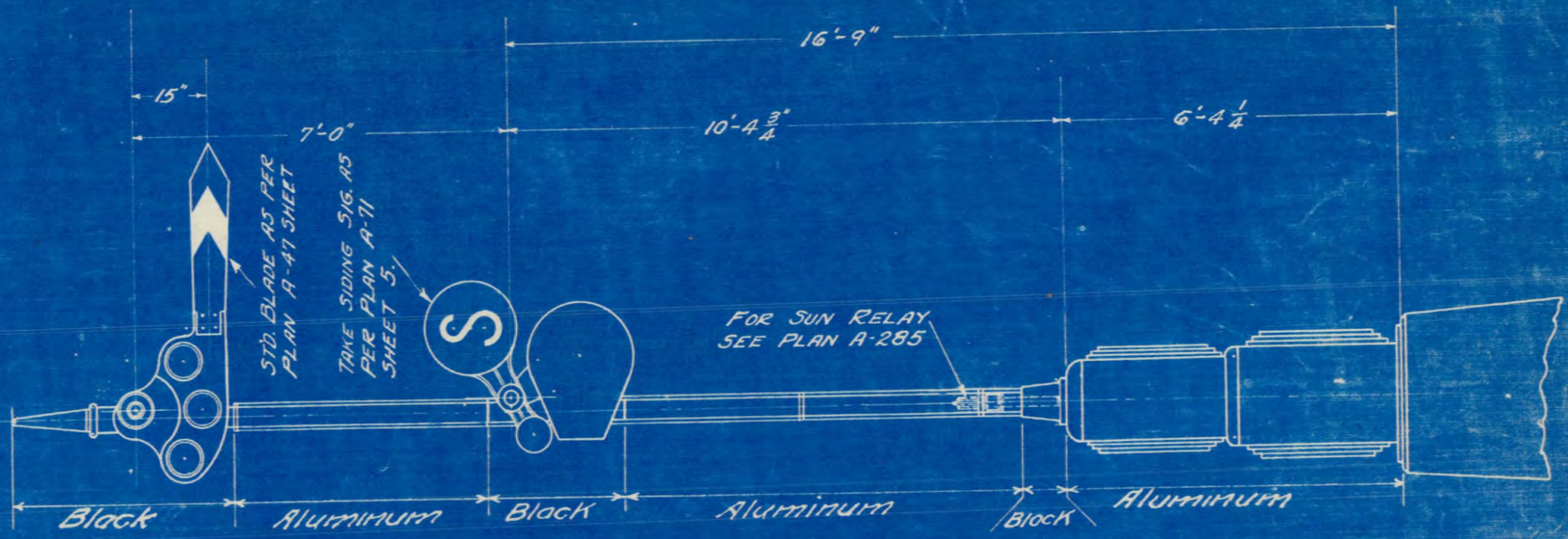
Approved _____ Correct _____

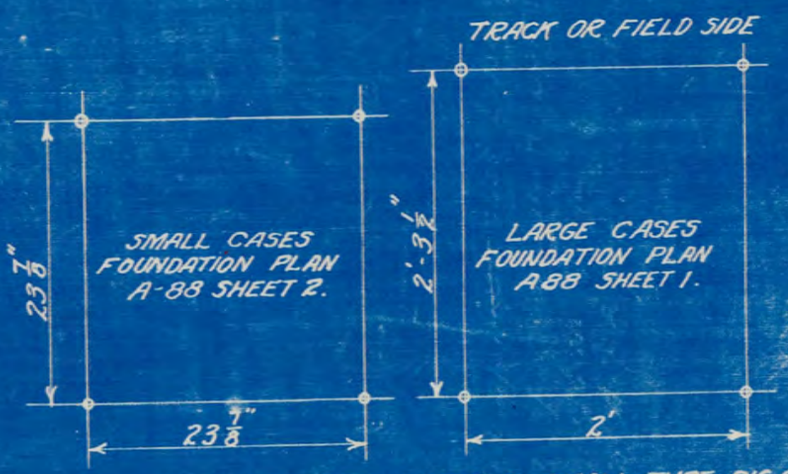
_____ Chief Engr. _____ Supt of Sigs.

Drawn Sept 21, 1923	Traced W.E.H.	A-193

REVISIONS		
WAS A-194 FEB. 11, 29	BOLT CENTERS FOR CASES ADDED 11-2-28.	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED. 7-9-29
Painting Schema Rev. Apr. 1, 1929.		

Scale ⅜" = 12"





BOLT CENTERS FOR LARGE & SMALL TYPE SIG. CASES.

LADDER AND STAYS TO BE PAINTED ALUMINUM.

A.C.L.R.R.

St'd. Location of Take Siding Indicator.

Signal Engrs. Office: Wilmington, N.C.

Approved: Chief Engr.

Correct: Supt. of Sigs.

Revised 2-3-34

REVISIONS

PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED 7-9-29.	Painting Scheme Rev. Apr. 1, 1929.	BOLT CENTERS FOR SIGNAL CASES ADDED 11-2-28.	Take siding signal w.o.s. marked TAKE SIDING 10-13-26.

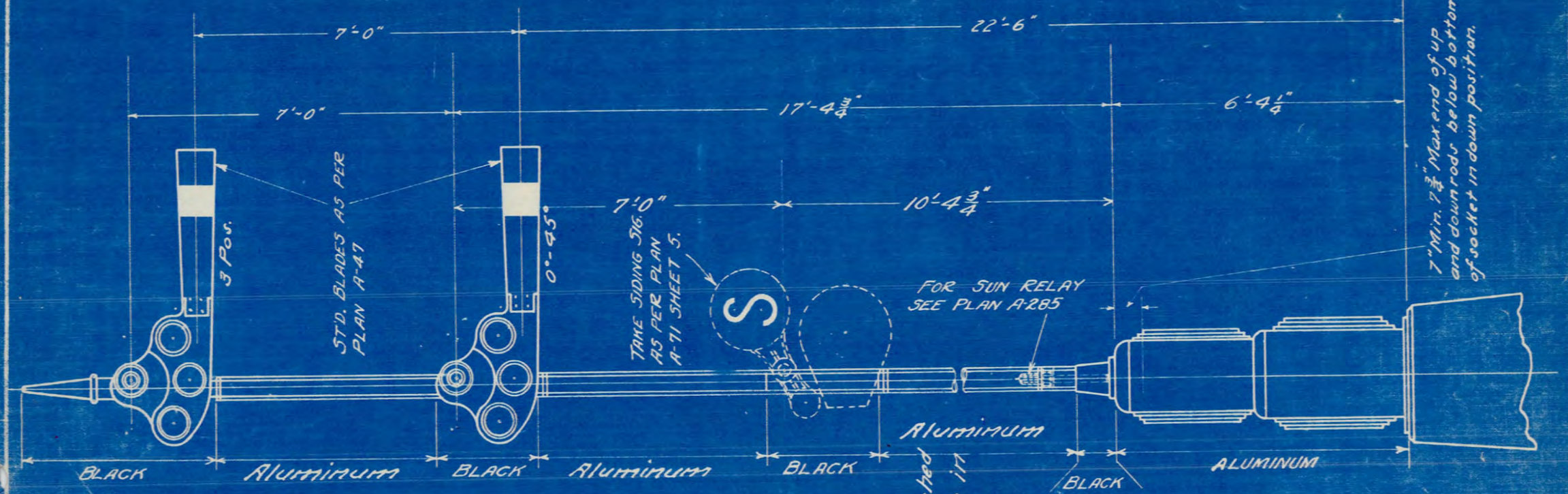
Drawn: Sept. 18, 1923

Traced: W.E.H.

A- 193

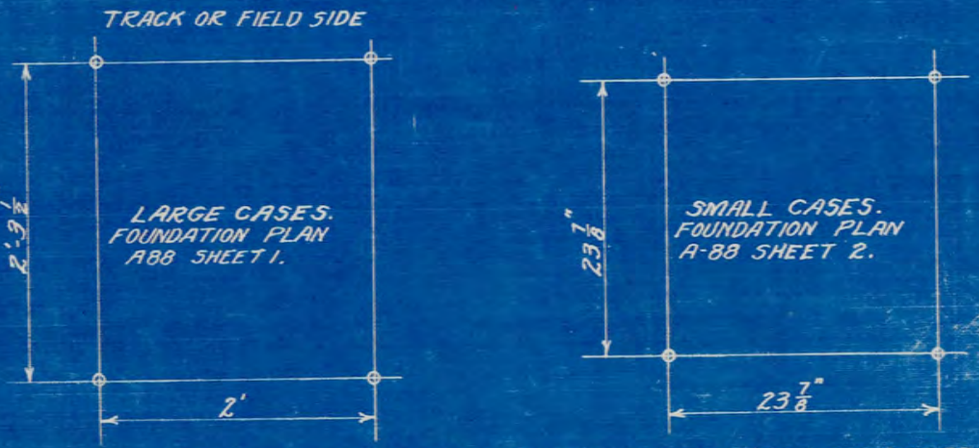
Scale 3/8" = 12"

68671 BRISTOL & PRESTON NEW YORK



LADDER AND STAYS TO BE PAINTED ALUMINUM.

When route siding indicator is attached to two arm signals, locate as shown in dotted lines.



BOLT CENTERS FOR LARGE & SMALL TYPE SIG. CASES.

A.C.L.R.R.

Std. 2 Arm, 3-Pos., A.H., U.Q., L.V., Style "S" Elec. Ground Signal. (Elec. Lighted)

Signal Engrs Office Wilmington, N.C.

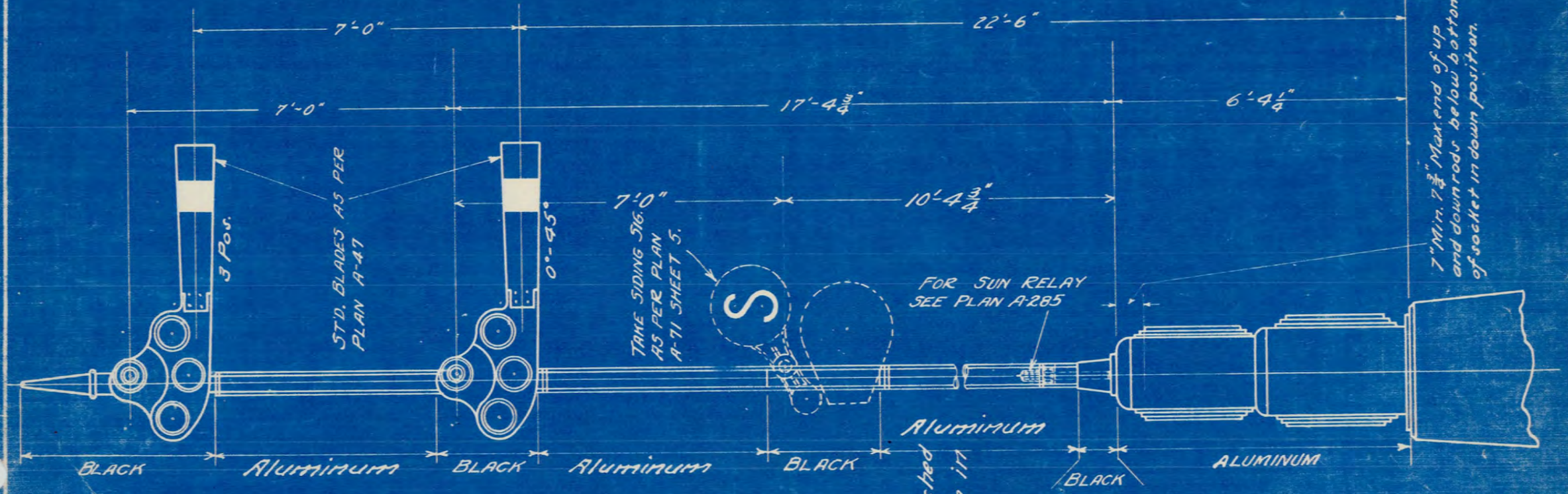
Approved: Chief Engr. Correct: Supt. of Sigs.

Drawn: BAW Sept. 28, 1923 | Traced: W.E.H | A-193

Scale: ⅜" = 12"

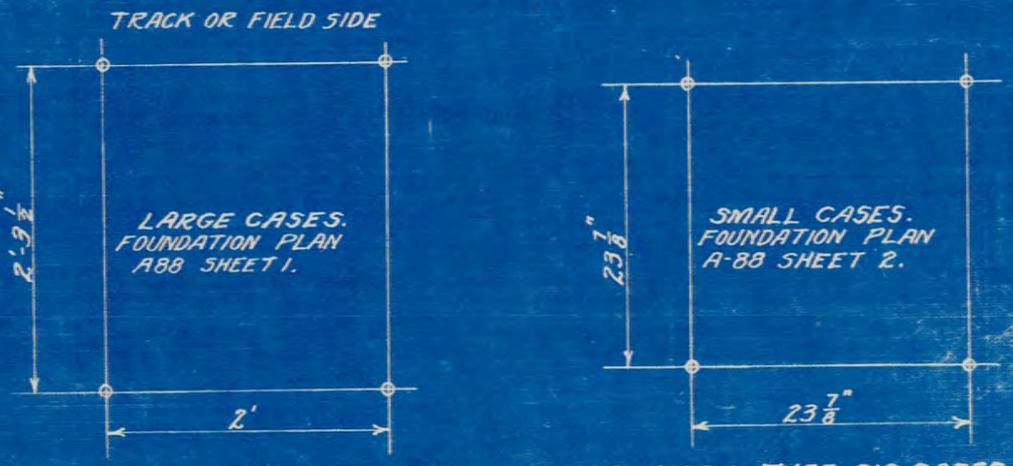
REVISIONS

Revised 2-3-34	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED 7-9-29.	WAS-195. FEB. 11, 29	BOLT CENTERS FOR CASES ADDED. 11-2-28	Take Siding Signal added. 1-7-25



LADDER AND STAYS TO BE PAINTED ALUMINUM.

When tolte siding indicator is attached to two arm signals, locate as shown in dotted lines.



BOLT CENTERS FOR LARGE & SMALL TYPE SIG. CASES.

A.C.L.R.R.

Std. 2 Arm, 3-Pos., A.H., U.Q., L.V., Style "S" Elec. Ground Signal. (Elec. Lighted)

Signal Engrs. Office Wilmington, N.C.

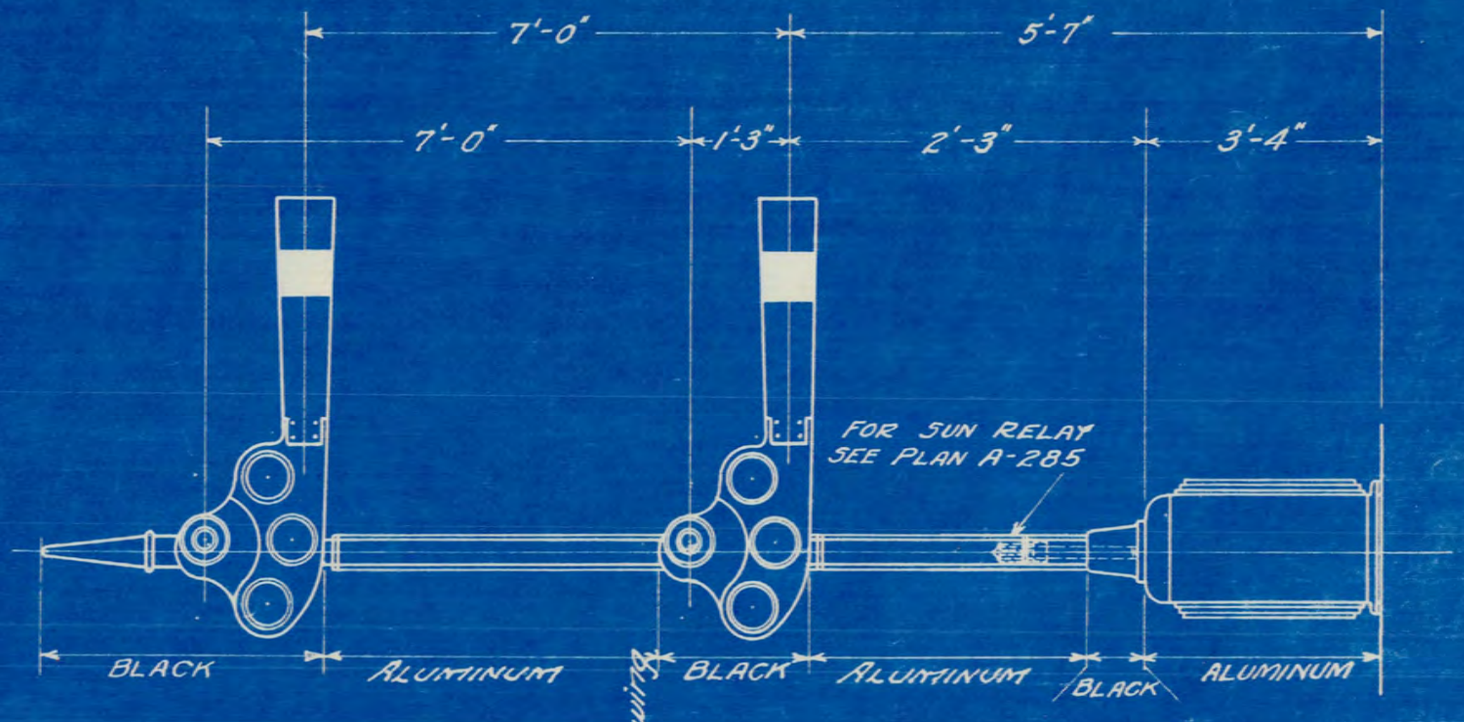
Approved _____ Chief Engr.

Correct _____ Supt. of Sigs.

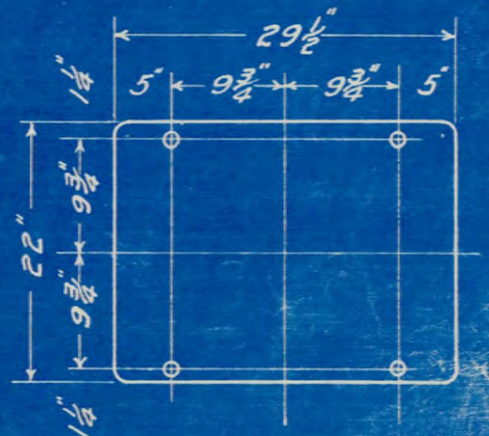
Scale ⅜" = 12"

REVISIONS				
Revised 2-3-34	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED 7-9-29.	WAS-195. FEB. 11, 29	BOLT CENTERS FOR CASES ADDED 11-2-28	Tolte Siding Signal added. 1-7-25

Drawn BAW Sept. 28, 1923 | Traced W.E.H. | A-193



LADDER AND STAYS TO BE PAINTED ALUMINUM.



Plan view of Mech. case base showing location of foundation bolts. Scale ¾"=12"

A.C.L.R.R.

St'd. 2 Arm, 3 Pos., R.H., U.Q., L.V., Style "S" Electric Bridge Signal. (Elec. Lighted.)

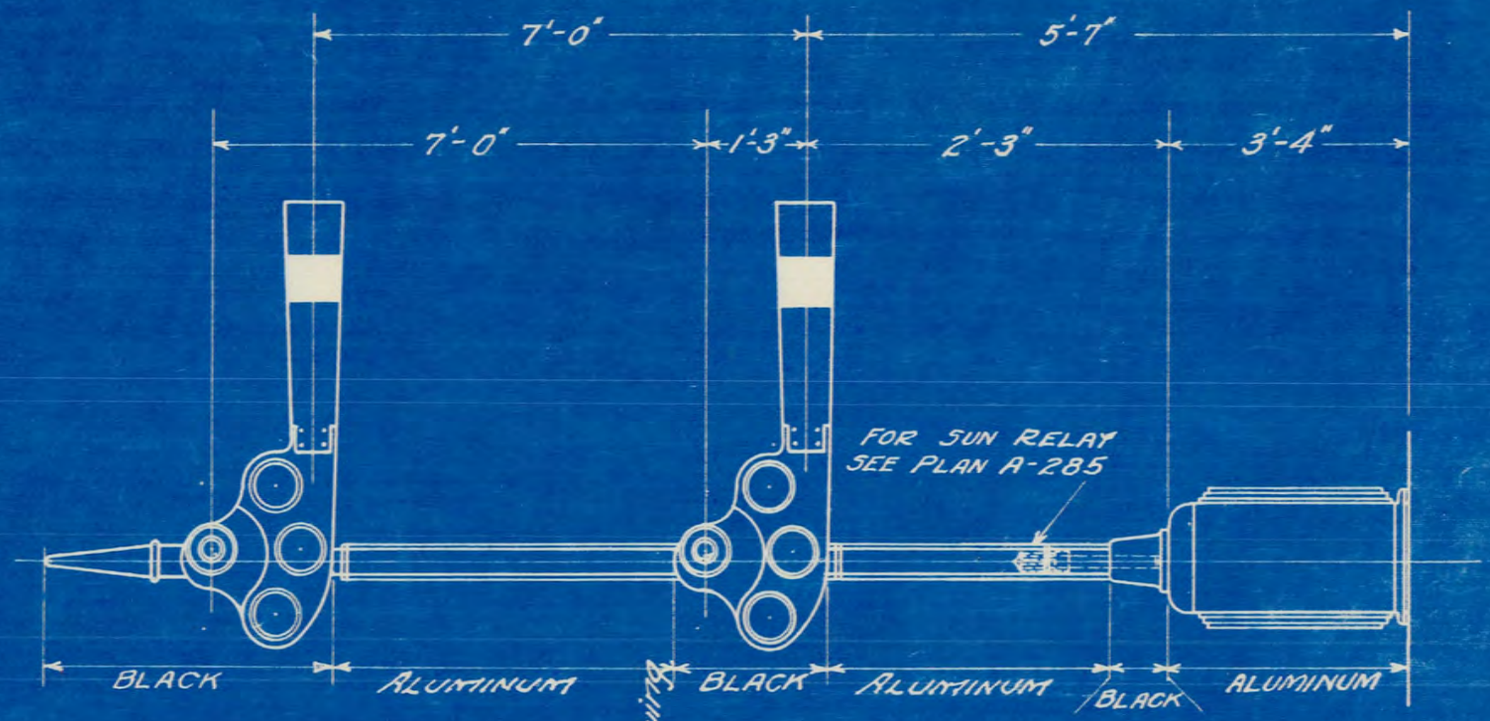
Signal Engr's. Office. Wilmington, N.C.

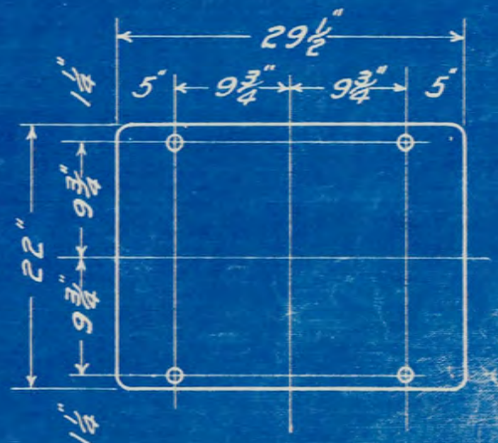
Approved Chief Engr

Correct Supt. Signals.

Revised 2-3-34

Scale ⅜"=12"	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED. 7-9-29.	WAS A-196 FEB. 11, 29.	REVISED DIMENSIONS 12-13-27.	Supersedes A-196 of Oct. 15, 1923.	Drawn Oct. 13, 1924	A-193





Plan view of Mech. case base showing location of foundation bolts.
Scale ¾" = 12"

LADDER AND STAYS TO BE PAINTED ALUMINUM.

A.C.L.R.R.

St'd. 2 Arm, 3 Pos., R.H., U.Q., L.V., Style "S" Electric Bridge Signal. (Elec. Lighted.)

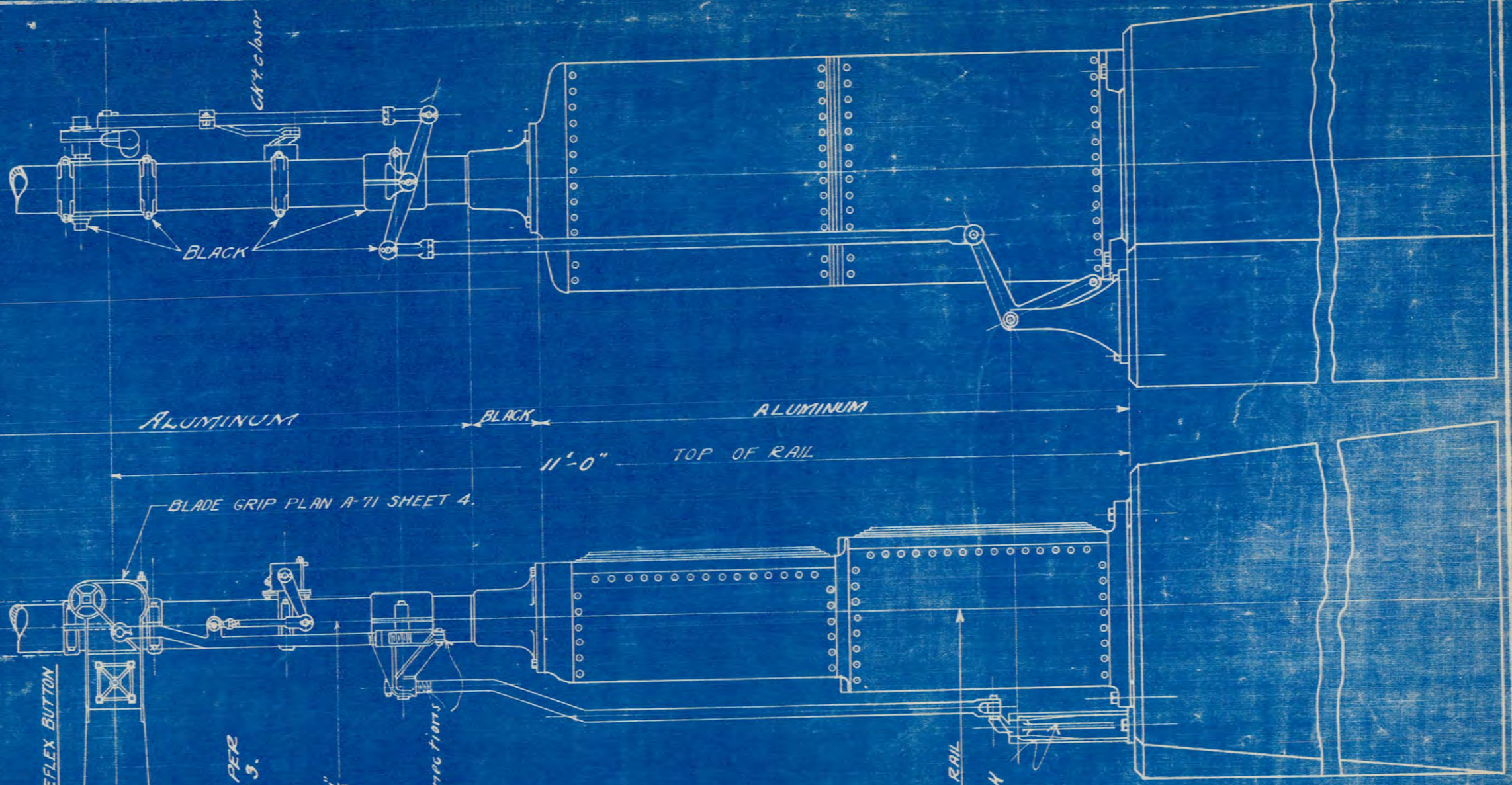
Signal Engr's. Office. Wilmington, N.C.

Approved _____ Chief Engr

Correct _____ Supt. Signals.

Revised 2-3-34

Scale ⅜" = 12"	PAINTING OF SIG. & LOCATION OF SUN RELAY ADDED. 7-9-29.	WAS A-196 FEB. 11, 29.	REVISED DIMENSIONS 12-13-27.	Supersedes A-196 of Oct. 15, 1923.	Drawn Oct. 13, 1924	A-193



A.C.L.R.R.

St'd. mechanical smashboard attached to electric signal.

Signal Engrs. Office Wilmington, N.C.

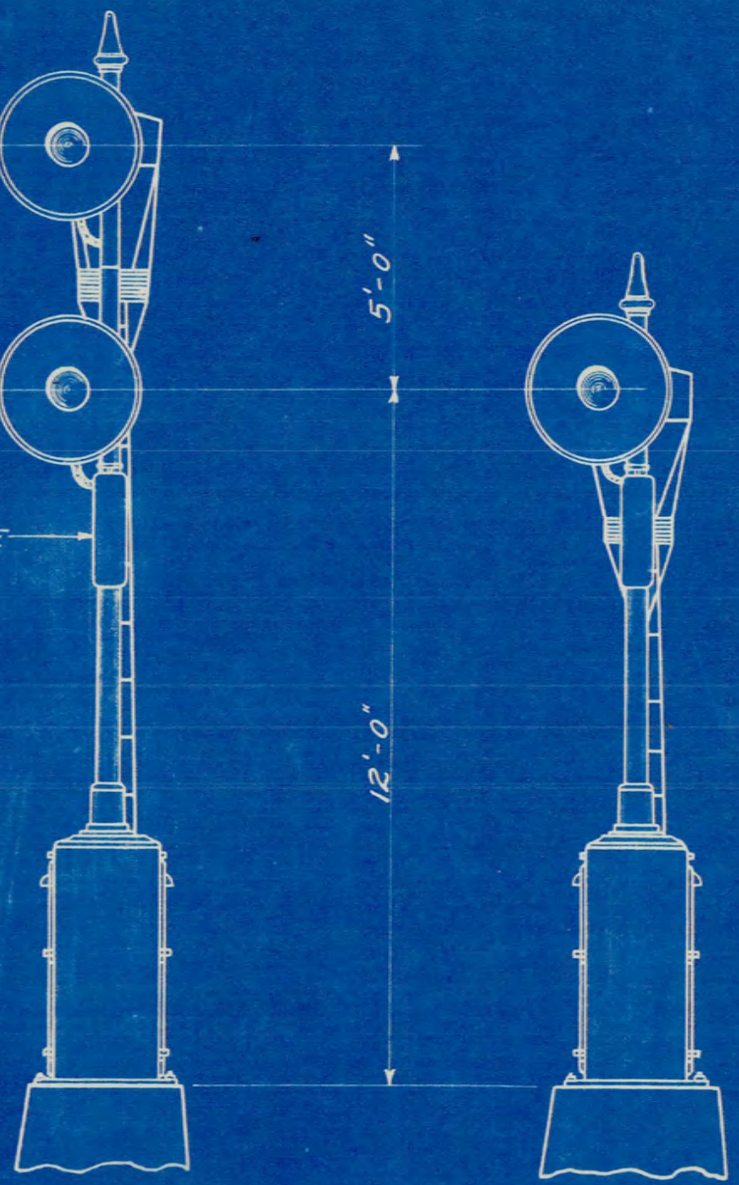
Approved R. Clement Chief Engr.

Correct A. J. Galloway Supt. Signals.

PAINTING ADDED 7-9-29.	WAS A-1 FEB. 11, 29.	Revised: Sept 28 1923	Drawn Mar. 31/1910	A 193

Revised 2-3-34

Scale



PAINTING

PINNACLE	BLACK
POLE	ALUMINUM
CASE	"
HEAD	"
ALL FITTINGS AROUND POLE	"
FRONT OF SHIELD	BLACK, FLAT.
BACK " "	ALUMINUM.
LADDER	ALUMINUM
LADDER STAYS	"
PLATFORM	"
FOUNDATION	WHITE
BELL CASTING	BLACK

A. C. L. R. R.

PAINTING OF SEARCHLIGHT SIGNALS

Supt. of Signals Office: Wilmington, N. C.

Approved Correct

Chief Eng'r. Supt. of Signals.

Revisions,

	Revised 2-3-34 " 2-19-34.	PINNACLE WAS SHOW PAINTED ALUMINUM. 12-11-30.

Drawn W.E.H.
SEPT. 9, 1930

A-193

Scale: None.

Sheet 6 of 6 ___ Prints

PAINTING

PAINT AND PAINTING SHALL BE IN ACCORDANCE WITH SEC. #33, OF HIGHWAY CROSSING SPECIFICATIONS, OF MAY 28, 1934.

FINISHING COAT

POLE, POLE BASE, AND ALL FITTINGS AROUND POLE, TO BE PAINTED ALUMINUM.

PINNACLE, SHIELDS (BACK-GROUNDS), LAMPS, LAMP-HOODS, AND CROSS-BAR, SUPPORTING LAMPS, TO BE PAINTED BLACK EGG-SHELL FINISH HIGH GRADE ENAMEL.

ALL SIGNS, COME FINISHED.

CONCRETE BASE, TO BE PAINTED ALTERNATE BLACK AND WHITE 3" STRIPES, AT AN ANGLE OF 45°.

GENERAL ENG. DEPT.
PRINT RECORD
REC'D 8/29/34 WITH
LETTER FROM R.R. Co.
DATED 8/27/34
SENT OUT WITH LETTER
OF ..... TO .....

A. C. L. R. R.

PAINTING
OF FLASHER-LIGHT TYPE
HIGHWAY CROSSING SIGNALS

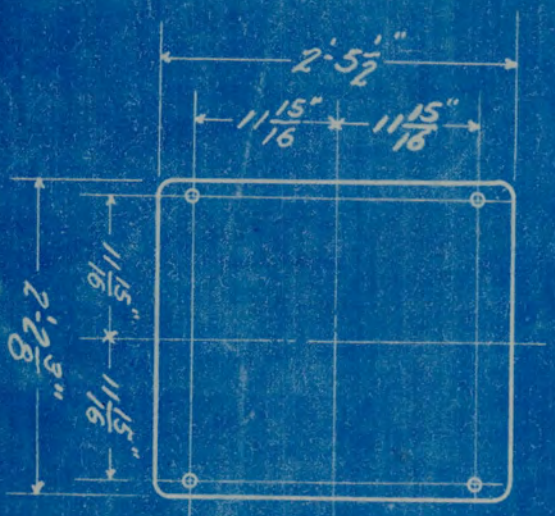
Supt. of Signals Office: Wilmington, N. C.
Approved
Correct

Chief Eng'r.	Supt. of Signals.
Drawn E.J.S. 8-24-34.	A-193

Revisions.

Sheet 7 of ___ Prints

Scale $\frac{3}{4}$" = 12"

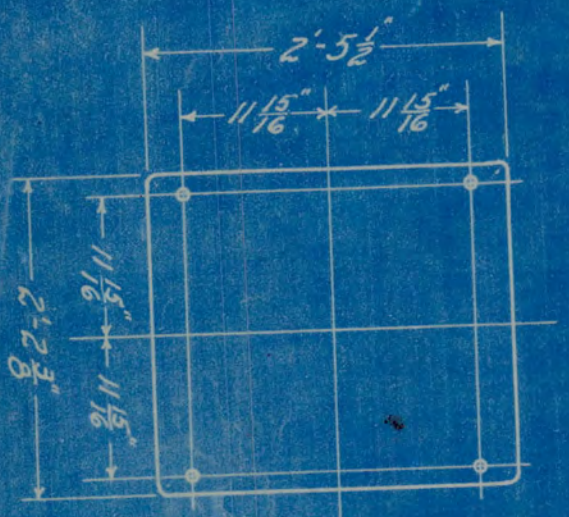


Plan view of Mech. case base showing location of Foundation bolts.
Scale $\frac{3}{4}$" = 12"

See Plan A-88 for Foundation.

A.C.L.R.R.	
Std. 1-Arm. 3 Pos. R.H. U.P. M.C. L.H. Style "S" Elec Ground Signal (Elec. lighted)	
Signal Engrs. Office Wilmington, N.C. Approved	
Correct	
Chief Engr.	Supt. of Sigs.
Drawn Sept. 21, 1923	Traced W.E.K.
	A-194

Scale $\frac{3}{4}$" = 12"



Plan view of Mech. case base showing location of foundation bolts.
Scale $\frac{3}{4}$" = 12"

See Plan A-88 for Foundation.

When take siding indicator is attached to two arm signals, locate as shown in dotted lines.

Take Siding Signal adapted to I-T-25

A.C.L.R.R.

Std. 2 Arm 3-Pos. R.H. U.P. L.H. Style "S"
Elec. Ground Signal.
(Elec. Lighted)

Signal Engrs. Office Wilmington, N.C.
Correct
Approved

Chief Engr.	Supt. of Sigs.
Drawn Sept. 28, 1923	Traced W.E.H.

A-195

ALL RES. 4.5 Ω

GATE REPEATER AND BELL CIRCUIT

EXTRA ARM WITH 2 LAMPS OR 4 LAMPS AS REQUIRED

BACK LAMPS - 10V. 5W.
FRONT LAMPS - 10V. 10W.
MAIN ARM

BACK / FRONT — FLASHING LIGHT SIGNAL LAMPS

5C. FOR 2 LAMPS - 7C. FOR 4 LAMPS.

7C.

7C.

7C.

TERM. BOARDS IN BASE

FLASHING STEADY BURNING GATE ARM LAMPS 10V. 18W.

BELL WHERE REQUIRED

MODEL 3564 CIRCUIT CONTROLLER

TERM. BLOCK OVER SLOT MECHANISM

PULL UP SLOT COIL

№ 2 LEAD ON EACH COIL IS UNDER TAG

HOLDING SLOT COIL

FIELD

SNUBBING RES.

VOLTAGE TO BE NOT LESS THAN 10.8 AT 15 AMPERES.

SIGNAL & GATE ARM IS SHOWN ON B-17-9.

GATE SLOT CONTROL

GATE DELAY CONTROL

RT-21 #222105

RT-42 #207275

PC # 228098

XR

GP

CONTACTS	
NO.	MADE
1	
2	
3	3°-93°
4	0°-3°
5	0°-87°
6	87°-93°
7	0°-87°
8	0°-89°
9	0°-89°

GENERAL ENG. DEPT. PRINT RECORD
RECD. 10-6-41 WITH LETTER FROM G.J. Williams
DATED 10-3-41
SENT OUT WITH LETTER
OF ..... TO .....

A. C. L. R. R.

CONTROL & WIRING OF FLASHING LIGHT TYPE SIGNAL WITH SHORT ARM GATE

Supt. of Signals Office: Wilmington, N. C.

Approved

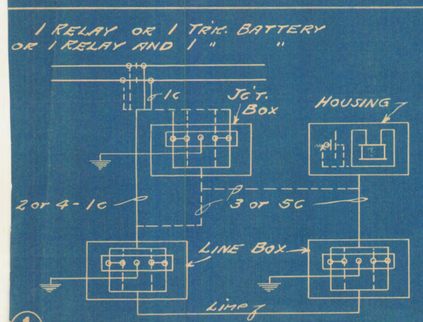
Supt. of Signals.

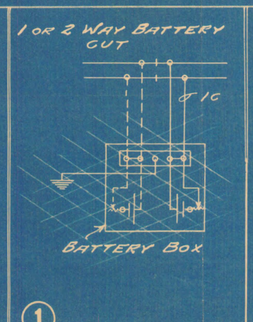
Drawn 8-21-40

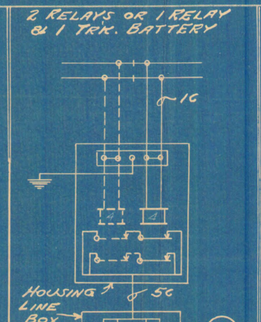
XB-5

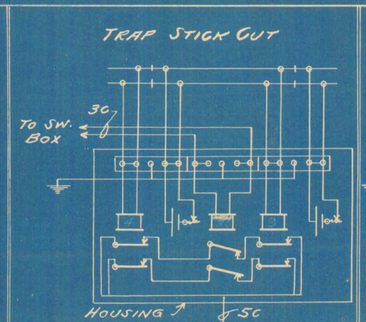
NEW TYPE H.C. CONTACT RELAY SHOWN. 10-1-41.	CHANGED RECTIFIER REFERENCES 5-12-41.	GATE OPER. BAT. SEPARATED FROM RESERVE LIGHT BAT. JAN. 16, 1941.

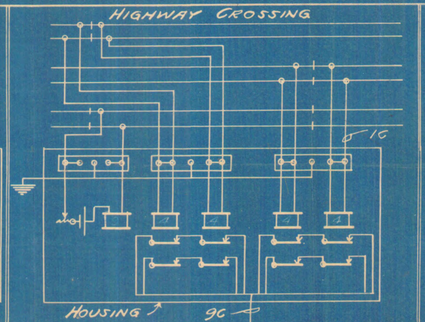
Prints

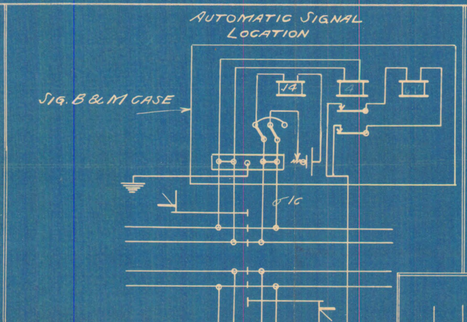


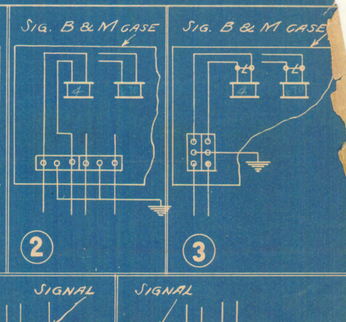


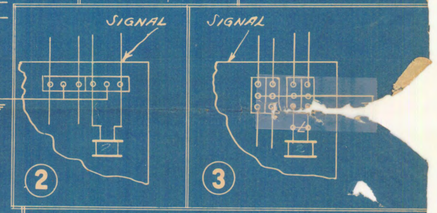


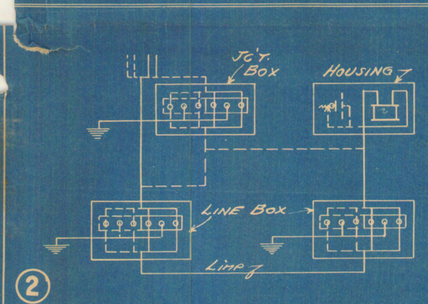


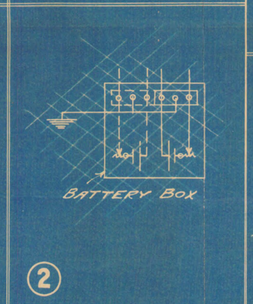


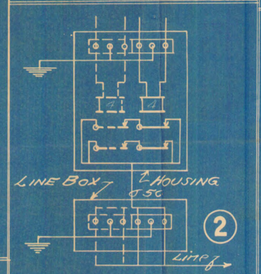


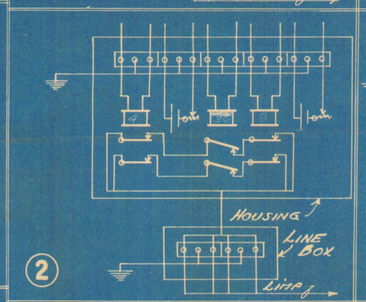


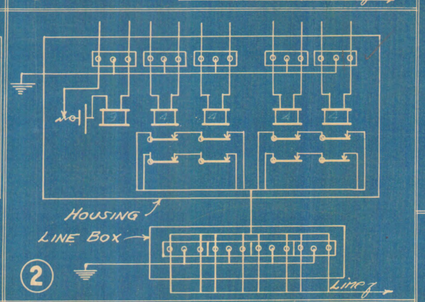


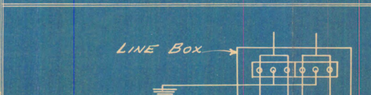


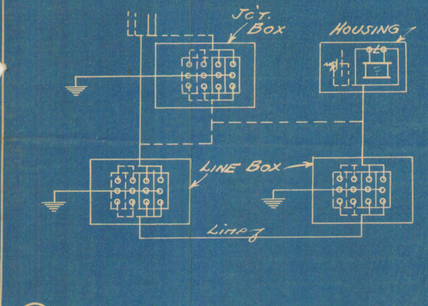


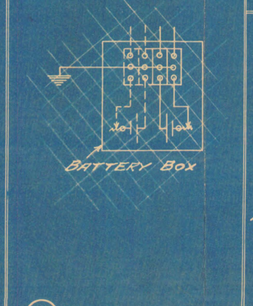


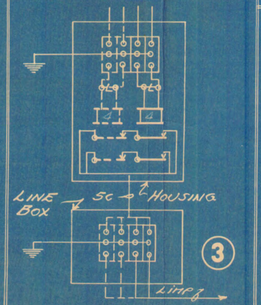


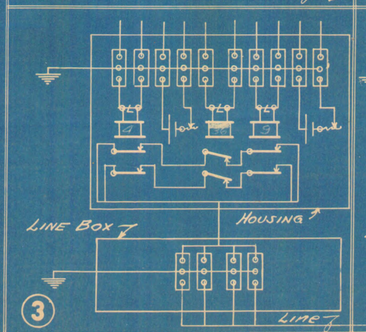


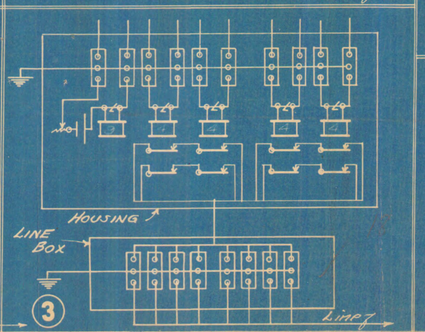


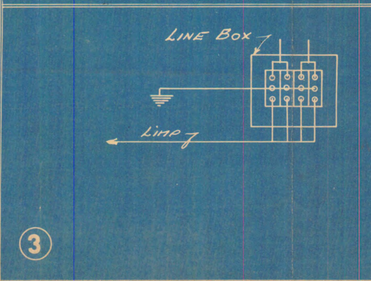












ARRESTERS AS FOLLOWS:

1 USING EUPATH Multipath Type
2 " W.RR.S.Co. Type DW1202
3 " Gen. Elec. Type 9LA4A9
US&S Co. Relay shunt arre

A. C. L

LIGHTNING A
COMBINAT

Supt. Signals Office

Approved

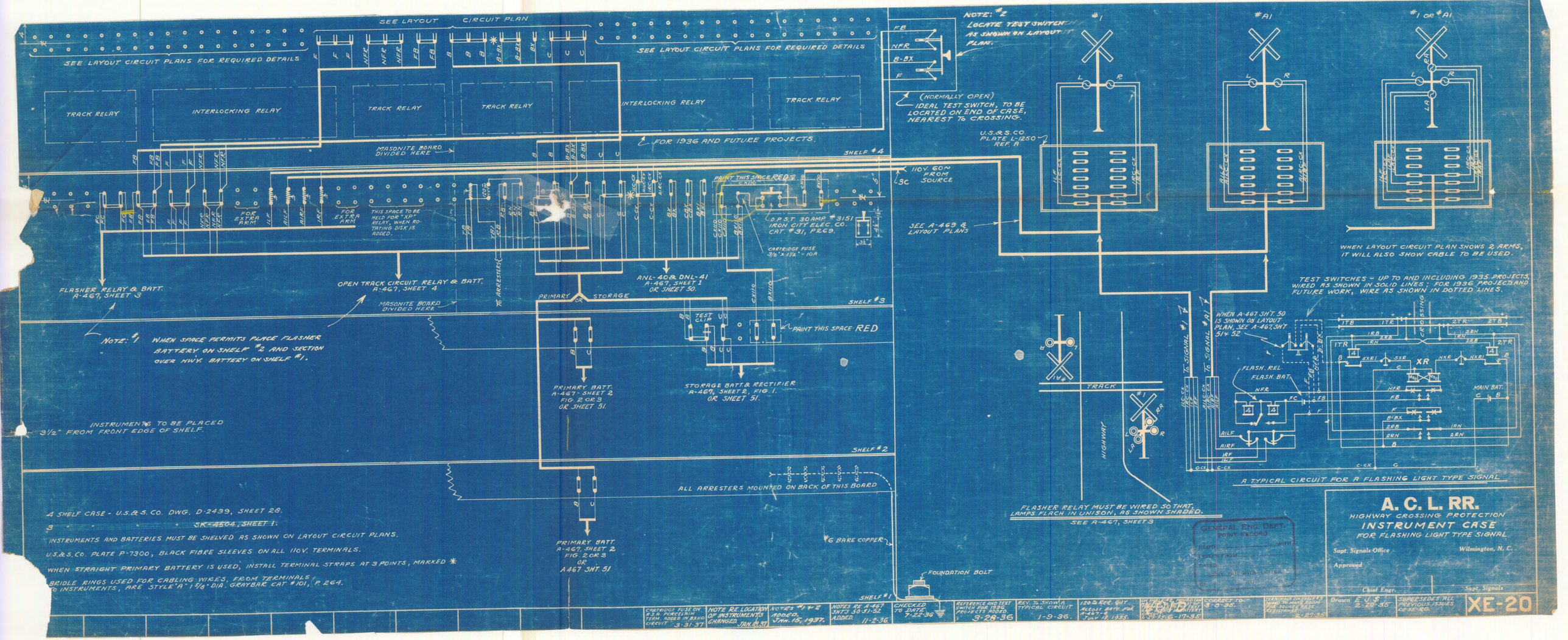
Chief Engr.

CORRECTED
2-15-35.

Drawn
Jan. 26, 1935.

Scale

Traced


SEE LAYOUT CIRCUIT PLAN
SEE LAYOUT CIRCUIT PLANS FOR REQUIRED DETAILS
TRACK RELAY
INTERLOCKING RELAY
TRACK RELAY
TRACK RELAY
INTERLOCKING RELAY
TRACK RELAY
FOR 1936 AND FUTURE PROJECTS.
MASONITE BOARD DIVIDED HERE
SHELF #4
FOR EXTRA ARM
THIS SPACE TO BE HELD FOR "XP" RELAY, WHEN ROTATING DISK IS ADDED.
PAINT THIS SPACE RED
D.P.S.T. 30 AMP. # 3151 IRON CITY ELEC. CO. CAT. #31, P.269.
CARTRIDGE FUSE 3/8" x 1 1/2" - 10A.
110V. 60~ FROM SOURCE
3C
SEE A-469 & LAYOUT PLANS
FLASHER RELAY & BATT. A-467, SHEET 3
OPEN TRACK CIRCUIT RELAY & BATT. A-467, SHEET 4
MASONITE BOARD DIVIDED HERE
76 ARRESTERS
PRIMARY OR STORAGE
ANL-40 & DNL-41 A-467, SHEET 1 OR SHEET 50.
SHELF #3
TEST CLIP
PAINT THIS SPACE RED
NOTE: #1 WHEN SPACE PERMITS PLACE FLASHER BATTERY ON SHELF #2 AND SECTION OVER NWY. BATTERY ON SHELF #1.
PRIMARY BATT. A-467 SHEET 2 FIG 2 OR 3 OR SHEET 51.
STORAGE BATT. & RECTIFIER A-467, SHEET 2, FIG. 1. OR SHEET 51.
INSTRUMENTS TO BE PLACED 3 1/2" FROM FRONT EDGE OF SHELF.
SHELF #2
ALL ARRESTERS MOUNTED ON BACK OF THIS BOARD
PRIMARY BATT. A-467, SHEET 2, FIG. 2 OR 3 OR A467 SHT. 51
#6 BARE COPPER
FOUNDATION BOLT
SHELF #1
A SHELF CASE - U.S.&S.Co. DWG. D-2439, SHEET 28.
3 " " " SK-4504, SHEET 1.
INSTRUMENTS AND BATTERIES MUST BE SHELVED AS SHOWN ON LAYOUT CIRCUIT PLANS.
U.S.&S.Co. PLATE P-7300, BLACK FIBRE SLEEVES ON ALL 110V. TERMINALS.
WHEN STRAIGHT PRIMARY BATTERY IS USED, INSTALL TERMINAL STRAPS AT 3 POINTS, MARKED *
BRIDLE RINGS USED FOR CABLING WIRES FROM TERMINALS TO INSTRUMENTS, ARE STYLE "A" 1 5/8" DIA. GRAYBAR CAT. #101, P. 264.
NOTE: #2 LOCATE TEST SWITCH AS SHOWN ON LAYOUT PLAN.
FB
NFR
B-BX
F
(NORMALLY OPEN) IDEAL TEST SWITCH, TO BE LOCATED ON END OF CASE, NEAREST TO CROSSING.
U.S.&S.CO. PLATE L-1250 REF. A
#1
#A1
#1 OR #A1
WHEN LAYOUT CIRCUIT PLAN SHOWS 2 ARMS, IT WILL ALSO SHOW CABLE TO BE USED.
TEST SWITCHES - UP TO AND INCLUDING 1935 PROJECTS WIRED AS SHOWN IN SOLID LINES; FOR 1936 PROJECTS AND FUTURE WORK, WIRE AS SHOWN IN DOTTED LINES.
WHEN A-467 SHT. 50 IS SHOWN ON LAYOUT PLAN, SEE A-467, SHT. 51 & 52
TO SIGNAL #1
TO SIGNAL #A1
CROSSING
FLASH. REL.
FLASH. BAT.
MAIN BAT.
XR
TRACK
HIGHWAY
#1
#A1
FLASHER RELAY MUST BE WIRED SO THAT LAMPS FLACH IN UNISON, AS SHOWN SHADED.
SEE A-467, SHEET 3
A TYPICAL CIRCUIT FOR A FLASHING LIGHT TYPE SIGNAL

GENERAL ENG. DEPT. PRINT RECORD
KEEP WITH
LETTER FROM
DATED
SIGNED
DATE OUT WITH LETTER
OF

CARTRIDGE FUSE ON #3 A. PORCELAIN TERM. ADDED IN BX110 CIRCUIT 3-31-37	NOTE RE. LOCATION OF INSTRUMENTS CHANGED TRK. CKT. 51	NOTES #1 & 2 ADDED, MAR. 15, 1937.	NOTES RE A-467 SHTS 50-51-52 ADDED 11-2-36	CHECKED TO DATE 7-22-36	REFERENCE AND TEST SWITCH FOR 1936 PROJECTS ADDED 3-28-36	REV. TO SHOW A TYPICAL CIRCUIT 1-9-36.	120 Ω REC. SUB. ADDED BATT. FOR 1936 & FUTURE JUNE 19 1935.	CHANGED C-CX WIRE ON TERM. #3 TO C-CX #1 TEST 6-17-35	CORRECT TO 3-8-35.	TERMINALS ON SHELF #3 CHANGED TO MAKE ROOM FOR SQUARE BASE RESISTANCE 2-27-35

Drawn E.J.S. 2-20-35

SUPERSEDES ALL PREVIOUS ISSUES DEC. 380.

XE-20

A. C. L. RR.

HIGHWAY CROSSING PROTECTION

INSTRUMENT CASE

FOR FLASHING LIGHT TYPE SIGNAL

Supt. Signals Office — Wilmington, N. C.

Approved

Chief Engr. — Supt. Signals